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INDIANA SCIENTISTS

A BIOGRAPHICAL DIRECTORY
AND AN ANALYSIS

By

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WITH BRIEF SECTIONS
by
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DEDICATION

TO LEADERS IN INDIANA SCIENCE

To the founders of the Indiana Academy: David Starr Jordan, John Merle Coulter, and T. C. Mendenhall (each a stimulating teacher and president of the American Association for the Advancement of Science); Amos W. Butler, Stanley Coulter, and Harvey W. Wiley.

FOREWORD

Brief biographical sketches of scientists born in Indiana, college- or university-trained in Indiana, or employed here, comprise the bulk of this volume. In addition, there are analyses of these scientists by where they were trained, by science, and by places of birth and of work. Some of the influences which apparently or obviously contributed to their achievement are also discussed. Brief summaries of the contributions of Indiana scientists in certain sciences are also given, as are summaries of the contributions made by various institutions. Several of these were contributed by specialists, under their own name. A summary and some conclusions of the book comprise Chapter I.

For the purpose of this volume, a person is classed as a scientist if he is sketched in one or more of the eight editions of *American Men of Science,* 1906–49. Included also are some persons who died before the first edition was compiled, who became significant in Indiana science after the last edition, or whose contributions to Indiana science are such as clearly to entitle them to sketching in this book.

The bulk of the biographical data here presented came from *American Men of Science* (Science Press, Lancaster, Penn.) under special arrangements with the present editor, Jaques Cattell. Numerous sketches are based, however, at least in part, on data given in one or more of the biennial volumes of *Who's Who in America* (A. N. Marquis Co., Chicago), or in necrologies of deceased members published in the *Proceedings* of the Indiana Academy of Science. Some data came from various other sources.

Persons born and educated in other states or countries and employed in Indiana less than two years are not sketched here, nor are those who came into the state and received a master's degree only and then left.

Included among the approximately 4,500 scientists here sketched are a considerable number of engineers, agriculturists, physicians, and others who some readers will believe should not have been included among Indiana scientists. However, science is very broad and notable contributions to organized knowledge are made in many fields. Contributions sufficient to merit, in the opinions of the able editors of *American Men of Science,* sketching in that directory are here judged to entitle the person, if born in Indiana or trained or employed here, to sketching in this volume.

ACKNOWLEDGEMENTS

This book was made possible only by the work of many individuals. First are the many scientists here sketched who supplied biographical sketches to the editors of *American Men of Science* or of *Who's Who in America,* or to other sources from which was obtained the information here presented. An appreciable number of scientists supplied the author information which has been incorporated in the sketches here given. Prof. Will E. Edington, for several years chairman of the committee of the Indiana Academy of Science on Indiana men of science, assembled from diverse sources, often at considerable effort, biographical sketches of various of the older scientists, persons not sketched in even the first editions of *Who's Who* (1898) or of *American Men of Science* (1906). The preparation of a card catalog of Indiana scientists was done with the aid of research assistants, hired with funds supplied 1945–49 by the Graduate School of Indiana University and since mid-1949 by the Indiana Academy of Science from personal donations of John S. Wright. The typing was mostly paid for from this latter source, as was the final editing, done by Bernita Gwaltney. Much of the final typing was ably done by Mrs. Yvonne Hoard.

In addition to the several men who contributed short sections on their science or institution and are so accredited, several others who requested that their name not be mentioned have aided in improving the summaries. Helpful suggestions on parts of this volume, notably the two articles reprinted, were also received from several others. Dr. Zabel, co-author of one reprinted article, compiled a considerable share of the information there used.

Special acknowledgement is due John S. Wright, whose encouragement and other aid have made this book possible. Without assurance that it would be appropriately published and widely distributed where it can be of service, I would not have had the courage to devote the time and energy required.

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CHAPTER I

SUMMARY AND CONCLUSIONS

Indiana has contributed many leaders and is widely known for famous authors and journalists. Far less well known is the fact that Indiana has been the birthplace of a large number of scientists, a goodly number of whom have been highly distinguished. For example, two Nobel prize winners were born in Indiana, as were 19 members of the National Academy of Sciences and 81 starred scientists. (These men are listed in Chapter IV.) Many other Hoosier scientists who for one reason or another have not won these particular honors have contributed notably to science and to industry, and are widely respected.

Although it is generally realized that scientists are important—indeed, precious—little research has been done on what conditions are especially conducive to the production of scientists. As a geographer, I have long been interested in where various commodities, such as wheat, hogs, coal, furniture, and works of art, are produced. Geographers are expected to know not only where all sorts of things are produced, but also why they are produced there; that is, what conditions favor their production.

It is coming to be widely recognized that man himself is civilization's most valuable resource. Though this concept is relatively new, it is surprising that so few earnest efforts have been made to learn the conditions conductive to the production of superior men. My own study of the geography of Indiana notables commenced in 1919 when I was writing the geography section of the *Handbook of Indiana Geology* for the then newly-established State Department of Conservation. I had made maps showing where in Indiana the most corn, wheat, peaches, coal, lumber, flour, furniture, etc., were produced. Then the birthplaces of a dozen famous Indiana authors were mapped, and it was seen that most of the authors came from less than one-fifth of the state. Two years later, a list of the Hoosier scientists starred in the 1921 edition of *American Men of Science* was compiled and their birthplaces plotted. Although their birthplaces are less concentrated in one part of the state than are those of the famous authors, most of the state had yielded few of these leading scientists.

This distribution aroused my scientific curiosity. Additional lists of Hoosier notables were gathered: college presidents, engineers, presidents of leading societies, etc. The evidence accumulating led to an expansion of the study to include other states. In 1928, *The Geography of American Notables* was published by Indiana University, and the volume aroused such widespread interest as to be soon out of print. During the next 20 years, further studies of notables were made, especially of distinguished scientists, and partly published in journals. The data on the starred scientists formed the nucleus of a volume published by the Johns Hopkins University Press in December, 1947. (*Scientists Starred 1903-1943, in " American Men of Science."*)

Subsequently, additional studies of Indiana scientists were made and partly published in the *Proceedings of the Indiana Academy of Science.* These earlier studies and many others are the basis for the present volume.

The bulk of *Indiana Scientists* consists of brief biographical sketches of certain scientists who were born in Indiana, received their college or doctoral training here, or pursued scientific work here for two years or longer. Those who contributed notably to science in Indiana have fuller sketches than those merely born, college-trained, or briefly employed in the state. Most of the persons sketched are those denoted as significant American scientists by appearing in one or more of the eight editions of *American Men of Science* from 1906 to 1944.

Another section of *Indiana Scientists,* Chapter III, consists of summaries by institutions of their contributions of scientists, and summaries by science of the chief personalities and contributions of Indiana scientists. These summaries, which are especially notable, are partly contributed by or with the aid of specialists, each listed under the title. It is hoped that from time to time more of this much-needed summary information will be contributed to the *Proceedings of the Indiana Academy of Science* and to the various journals.

Chapter IV presents lists and other data as to some of these scientists. Finally, Chapter V is a series of special studies of some of the scientists reprinted from the *Proceedings.*

The summary and conclusions make up the other chief part of the volume, Chapter I.

Of the about 4,340 scientists sketched, slightly more than a fourth are chemists; about a sixth, biologists; nearly an eighth, physicists; and nearly an eighth, engineers. In addition, there are about 250 mathematicians, 210 psychologists, 130 geologists or geographers, and almost 100 each of bacteriologists, pharmacologists, and physiologists. A score of other disciplines are represented by smaller numbers.

The number in each of the categories, alphabetically arranged, appears below. (Individuals who list two or more specialties are classed with the first named.)

Agricultural economics, 33; agronomy, 48; anatomy, 43; animal husbandry, 27; anthropology or archeology, 22; astronomy, 33; bacteriology, 95; biology, 79; microbiology, 3; biophysics, 3; botany, 168; ceramics, 3; chemistry (type unspecified), 736; agricultural chemistry, 16; analytical chemistry, 26; biochemistry, 89; inorganic chemistry, 16; organic chemistry, 271; petroleum chemistry, 3; pharmaceutical chemistry, 21; physical chemistry, 94; physiological chemistry, 10; (total chemistry, 1282 plus 182 chemical engineers); conservation, 3; cytology, 8; dairy husbandry, 26; dentistry, etc., 9; dermatology, 3; ecology, 14 (animal, 7; plant, 7); education (chiefly physical), 16; embryology, 9; entomology, 57; engineering (not specified), 79; aeronautical engineering, 12; agricultural engineering, 6; chemical engineering, 182; civil engineering, 31; electrical engineering, 73; mechanical engineering, 108; petroleum engineering, 5; radio engineering, 9; sanitary engineering, 7; (total engineering, 513); ethnology, 1; eugenics, 1; foods, 10; forestry, 19; genetics, 26; geography, 33; geology, 88; geophysics, 3; health (public), 14; histology, 15; horticulture, 37; hydrology, 2; immunology, 8; linguistics, 1; lithography, 1; mathematics, 251; medicine (mostly internal), 76; metallurgy, 69; meteorology, 6; mycology, 14; nutrition, 26; oceanography, 2; ophthalmology, 2; ornithology, 4; paleontology, 13; parasitology, 9; pathology, 78 (human, 23, animal, 3, plant, 52); pediatrics, 3; petrology, 1; pharmacology, pharmacy, etc., 71 (plus 21 pharmaceutical chemists); physiology (human and animal), 63; physiology (plant), 32; physics, 369; physics, nuclear, 8; pomology, 5; poultry science, 13; psychology, 211 (about 50 in clinical psychology, some in psychiatry, a few in philosophy); radiology, 9; soil science, 25; speech, 8; statistics, 5; surgery (mostly specialized), 23; textiles, 1; toxology, 2; zoology, 142 (about 20 specified ichythology).

Birthplaces of Indiana Scientists

Approximately half of the scientists sketched were born outside Indiana. Of these, 188 were foreign-born. Canada yielded 42; Germany 26, Great Britain 19, other parts of northwestern Europe 27, eastern and southern Europe 32; China 14, other parts of Asia 13; Africa five; Latin America eight; and New Zealand two.

Of the American-born, New England produced 129, New York 178, Pennsylvania 157, New Jersey 34, Maryland 35, Virginia 24, and other eastern and southeastern states 51.

Kentucky yielded 69 (mostly from Louisville and other points near Indiana), Tennessee and West Virginia each yielded 21, Texas 38, and all other southern states 63. The Rocky Mountain states produced 87 and the Pacific states 65.

About half of the native Americans not born in Indiana were born in the other states of the Midwest: 300 in Illinois, 255 in Ohio, 125 in Michigan, 109 in Iowa, 75 in Wisconsin, 77 in Kansas, 64 in Missouri, 57 in Minnesota,44 in Nebraska, and 34 in Dakota. Chicago alone yielded 94.

Of the 2,039 born in Indiana, Indianapolis accounted for 163; five places accounted for from 40 to 55 each; six places for from 20 to 27; 25 yielded seven, eight, or nine; 34 yielded five or six; 60 produced three or four; 103 places yielded two; and 256 places, one. Hence, 490 Indiana places are given as the birthplace of these scientists. Each county is credited with at least one. Many of the villages were small, and scores of them no longer appear on even detailed maps. Presumably, most of the 77 men and women who gave their birthplace by county only came from farms; and doubtless some who gave their birthplace as a village or town were actually born on a nearby farm.

First, let us consider the cities and towns which are outstanding. Those which yielded 20 or more, arranged alphabetically with the number, are: Bloomington 26, Evansville 31, Ft. Wayne 51, Indianapolis 163, Kokomo 27, Lafayette (including West Lafayette) 46, Logansport 21, Muncie 20, New Albany 20, Richmond 47, South Bend 41, and Terre Haute 55.

Places which yielded from seven to 19 scientists are: Anderson 15, Aurora 9, Bedford 10, Brazil 7, Brookville 7, Columbia City 9, Columbus 7, Connersville 11, Crawfordsville 14, Elkhart 14, Elwood 7, Frankfort 16, Garrett 7, Goshen 8, Greencastle 14, Greenfield 8, Hammond 8, Huntingburg 10, Huntington 14, Jeffersonville 11, Kendallville 12, La Porte 13, Lawrenceburg 7, Lebanon 12, Liberty 8, Linton 10, Madison 14, Marion 14, Michigan City 9, Mt. Vernon 13, Newcastle 8, Noblesville 8, North Manchester 14, Peru 8, Portland 8, Princeton 8, Remington 7, Rensselaer 7, Rockport 7, Salem 12, Shelbyville 11, Tipton 7, Union City 7, Valparaiso 7, Vincennes 13, Wabash 10, and Warsaw 8.

Some smaller places which yielded fewer than seven but were outstanding in proportion to their smaller populations are: Angola 5, Attica 5, Batesville 5, Bloomfield 5, Bluffton 6, Butler 5, Delphi 6, Economy 5, Fowler 5, Franklin 5, Goodland 5, Lagrange 5, Marshall 5, Moores Hill 5, Mulberry 4, Oakland City 4, Orleans 6, Paoli 5, Pendleton 5, Plainfield 6, Sheridan 6, Upland 5, Walkerton 5, Waynetown 4, Whiting 5, Windfall 4, Worthington 4, and Zionsville 5.

The cities, towns, and counties (if the birthplace is given by county only) which one or more of the scientists report as their birthplace are listed alphabetically in Chapter IV, with the number born in each. Lists of those born in each place have been compiled but are not published here. The names of the starred scientists are given by county and town of birth in the special section on starred scientists reprinted in Chapter V.

Regional Distribution of the Birthplaces

The birthplaces of a large share of the scientists born in Indiana have been studied in detail. The number born in each county has been compared with the population to obtain the yield per 10,000. Counties have been grouped in various ways and compared with the distribution of various environmental conditions. Changes in the yield of various areas between earlier and later decades have been noted. In brief, the problem of why the scientists' birthplaces were not distributed in accord with the distribution of population at the time of their birth has been tackled from numerous angles.

In Chapter V are reprinted detailed studies of two groups of Indiana scientists, all those sketched in the seventh edition of *American Men of Science,* and all the starred scientists. Here an abstract is presented of the findings presented there with the help of maps. The present summary also makes use of some evidence derived from detailed studies of birthplaces of non-scientists born in Indiana and of notables born in other states.

The birthplace distribution of 1,265 Indiana scientists reveals that of Indiana's 92 counties the 20 counties that yielded most in proportion to their population at about the time of birth of the average scientist were, in decreasing order: Monroe, Union, Wayne, Fayette, Montgomery, Switzerland, Clinton, Jasper, Newton, Tippecanoe, Hancock, Boone, Howard, Putnam, Washington, Hamilton, Noble, Johnson, Wabash, and Owen. These counties, except Switzerland, are on neither the northern nor the southern margins of the state. The three counties that produced one scientist per less than 1,000 population at about the time of their birth are in the east-central part of the state, Wayne County (of which Richmond is the chief city) and the two adjacent counties to the south, Union and Fayette. Three other high counties, which produced one scientist to little more than 1,000 people, are Tippecanoe (which contains Lafayette and Purdue University) and two adjacent counties, Clinton to the east and Montgomery to the south. Other high counties are Monroe (which contains Bloomington and Indiana University) and Newton and Jasper counties (about midway between Lafayette and Chicago), and Hancock County, just east of Indianapolis. Most of the counties which produced 69-89 scientists per 100,000 people are close to the most productive counties. Exceptions are Washington (containing Salem and Paoli, exceptionally fruitful towns) and Noble, near Ft. Wayne in the northeastern corner of the state.

Five of the ten counties which yielded fewest scientists in proportion to population border the Ohio River. Three others are also in southern Indiana. Northwestern Indiana has, however, two counties which rank low and three others which rank relatively low. The central third of the state, north and south, contains no county which ranks very low and only one, Rush, which ranks relatively low.

These data on the yield of scientists in proportion to population when they were born suggest that the presence of a college where science is valued played an appreciable role. The counties where colleges were conspicuous in 1900 all rank high. Thus, Wayne, Montgomery, Monroe, and Tippecanoe counties, with Earlham and Wabash colleges and Indiana and Purdue universities, all rank in the upper tenth of the counties in yield. Putnam, with DePauw, also ranks in the upper one-sixth of the counties. Three other high counties are close to Purdue University (Clinton, Jasper, and Newton). Another high county (Hancock), although it has no college, is situated not far from several colleges. Switzerland and Noble counties are the most conspicuous exceptions to the rule that the high counties either have a college or are relatively close to one.

Although most of the college influence in increasing the yield of scientists in proportion to population is due to educational stimulation, mention may be made of the fact that many scientists born in college towns are the children of professors.

The distribution of the birthplaces of the 81 scientists who have been starred in *American Men of Science* as distinguished for research has been analyzed in more detail than that used for the non-starred scientists just discussed. As the starred scientists are a distinctly more distinguished group than the non-starred scientists, the distribution of their birthplaces throws more light on factors conducive to the production of leaders. Half of the state's counties yielded no starred scientist and a quarter of them yielded only one each. By contrast, Marion County (which contains Indianapolis) yielded five, Switzerland, Johnson, and Wayne counties each four, and Jefferson, Union, Hancock, Allen, and Vigo three each. The yield by quarters of the state's population at the median date of the birth of these 81 scientists (1875) is as follows: The southeast quarter was the birthplace of 29 scientists, giving a yield of 14.5 per 100,000 population. The northeast quarter yielded 23, or 11.5 per 100,000 population. The southwest yielded 19, or 9.5 per 100,000. The northwest yielded 11, or 5.5 per 100,000. Thus, the southeast quarter did nearly three times as well as the equally populous northwest, and the northeast fully twice as well. The eastern half of the state's population yielded 63.5 per cent of the total number; the southern half yielded 58.5 per cent.

The unglaciated part of the state yielded eight starred scientists, or at a rate of only 4.8 per 100,000 population. The relatively prosperous lower Wabash Valley Lowland of the southwestern part of the state, south of Terre Haute, yielded only one starred scientist. These nine southwestern counties yielded starred scientists at the rate of one per 220,000 people. Fifteen northwestern counties having a combined population of 250,000 people yielded none, although two contain Wabash College and Purdue University. Thus, 15 counties east and southeast of Indianapolis having a combined population of 200,000 yielded 25 starred scientists or one per 8,000 people, while a similar number of counties in the northwest having then 50,000 more people yielded none.

Theories as to the Contrast in Yield of Notables

Maps have been made of the yield of the starred scientists and other scientists and of notables of various other sorts (especially persons sketched in *Who's Who in America*) per unit of population at about the time of their birth. Likewise, many maps of environmental conditions have been made. Below is a summary of some correspondences and disagreements. (Details on the climate contrasts are presented in Visher: Climate of Indiana, 511 pp., Indiana University 1944.)

1) It is often claimed that differences in climate influence the production of notables. The evidence on this point in Indiana is of interest. Climatic contrasts in Indiana are small; the two sections which differ most widely, the Ohio River Valley and the littoral of Lake Michigan, display no correlation in the yield of scientists. However, the sixth of the state possessing the longest hot summer, the southwest, has yielded far fewer scientists proportionately than has the opposite corner of the state, which is coolest. The most productive part of the state is, however, not the coolest. Hence, climatic differences clearly are not significant in Indiana in this respect.

2) The eminent historian Frederick J. Turner declared, "It often seems to be largely a matter of topography; the level lands yield leaders as well as crops, while the rugged lands produce few of either." The inadequacy of that theory is proved in Indiana, where much of the nearly level land is relatively unproductive of leaders, while some of the most productive areas are fairly hilly. Indeed, though the unglaci-

ated, especially hilly part of the state is largely poor in both crops and leaders, it is no less productive of leaders in proportion to population than are some of the most level lands. One of the counties which has stood high in the production of leaders in proportion to population is one of large local relief (Switzerland County).

3) Another often-held theory is that "as wealth increases, so does the yield of leaders." Such a correlation does prevail in the blue grass regions of Kentucky and Tennessee, and in various other states and regions, but not in Indiana. The parts of Indiana having the greatest tangible wealth per average square mile or per capita are not the most productive of scientists; large sections of relatively rich and prosperous land have yielded few. For example, Benton, Howard, Rush, Blackford, Knox and nearby rich counties with a combined population of much more than 200,000 yielded not one starred scientist. The parts of the state that have yielded coal in abundance are conspicuously unproductive, as are some of the industrially active areas. Although only one of the state's ten exceptionally poor counties has yielded relatively many notables in proportion to population, the evidence from Indiana is sufficient to indicate that increased areal material does not necessarily result in a larger yield of notables.

4) Another explanation of regional contrasts in the yield of notables is that notables are a product of relatively advanced communities. "Frontiers can not be expected to produce leaders, as the people are engaged in hewing homes out of the wilderness." In Indiana this theory receives some support. The southeastern part of the state, near Cincinnati and northwestward to Indianapolis, the first part to be well developed, includes most of the more productive counties. The northwestern section of the state, the most recently developed, has produced relatively few leaders.

But the inadequacy of this theory is almost proved by two facts: (a) the part of the state which was most productive 1830-80 has in recent decades become relatively unproductive; and (b) the part of the state first settled—and continuously prosperous since 1830, the southwestern, the lower Wabash Valley, in which is located Vincennes, the oldest settlement in the state—has has been relatively unproductive of leaders. Not one starred scientist has been born in the region south of Terre Haute and Washington. Crawfordsville was another early cultural center which has yielded no starred scientists, although several have graduated from Wabash College. Tippecanoe County, containing Purdue, likewise has yielded no starred scientist—though numerous non-starred scientists.

5) Another theory is that notable leaders come largely from areas which are educationally favored. In Indiana, for example, the four counties containing Earlham and Franklin colleges and DePauw and Indiana universities yielded ten starred scientists, one-eighth of the total number, although at the average date of birth of the scientists these counties contained only 95,000 people, or somewhat less than one-twentieth of the state's population. But on the other hand, five of the six counties which had the highest yield of starred scientists in proportion to population lacked colleges. These five especially productive counties are Union, Switzerland, Jefferson, Hancock, and Parke, with a total yield of 13 starred scientists from a population of 82,000, or an average of one scientist for 6,300 people. These five counties yielded starred scientists at about a 50 per cent higher rate than did the highest four counties with colleges.

Yield of Scientists from City, Town and Country

Since geographic conditions in sizable regions in Indiana do not correlate closely with the yield of notables, it is desirable to consider types of land use,—specifically, the relative productivity of city, town, and country. Birthplaces have been located in as much detail as possible. A letter was sent to numerous notables asking if they were reared on a farm, in a village or town, in a small city, or in a large city or a suburb. At the time when most of these men and women were born, Indiana was predominantly rural and very few children were born in city hospitals. Hence, many were born on farms. However, towns did much better than did the farms. Likewise, the small cities yielded more leaders per capita than did the larger ones, except of men of exceptional distinction.

Especial note was made of the contribution of county seats and college towns. The average Indiana county seat yielded at more than three times the rate for the state. College towns (nearly all also county seats) did exceptionally well, more than twice as well as the average town.

This correlation between type of place of birth and yield of notables is far greater than the correlation between yield and topography, soil, climate, material resources, or age of settlement. It reflects the relative attractions of certain types of places for the parents of notables. At the time that most of the notables here studied were born, a large share of the more alert, ambitious people of Indiana apparently were living in towns.

Occupational groups must be considered also. What are their contrasts in the yield of notables? Data were obtained by questionnaire from many scientists as to the occupations of their fathers. The replies reveal that in proportion to their numbers in the population according to the census nearest the birth of the average notable, professional men fathered more than twice as many notables as did business men, nearly 20 times as many as did farmers, about 45 times as many as did skilled laborers, and more than 1,000 times as many as did unskilled laborers. Farmers fathered one-fourth fewer than their share. In other words, only one unskilled laborer in about 38,000 fathered a son or daughter sufficiently noteworthy to win a place in *Who's Who;* one skilled laborer in 13,000 had that distinction; one business man in 62; one professional man in 27; and one Protestant clergyman in 15.

Why Do Few Homes Yield Leaders?

It is therefore apparent that a small portion of the men of Indiana fathered a large share of the leaders. The interpretation of this concentration is in dispute. Advocates of the theory that environmental influences dominate assert that the classes that produced more leaders did so because they could offer better opportunities for cultural and physical development. Conversely, advocates of the theory that hereditary influences are predominant declare that children of unskilled laborers, when adopted into homes of professional men or otherwise given comparable opportunities, nearly always fail to become leaders. They likewise declare that the superior economic status of the fathers of most leaders is the result of their superior qualities of mental alertness, earnestness, ambition, and vitality.

Advocates of the theory that social selection is very important find much support in such data as are here summarized. They point out that the mentally alert people are found chiefly in occupations where their mentality is most advantageous, while the mentally dull are found chiefly in occupations calling for physical strength or routine work. Social selection of another type is illustrated by immigrants of exceptional ability. For example, many eminent Americans are German descendants, especially of the liberals who came soon after the unsuccessful revolution of 1848. Scotland, both directly and via north Ireland (the Scotch-Irish), also has supplied many ancestors of eminent Americans. But according to much evidence, by far the largest group of American leaders are descendants of emigrants from East Anglia, England, the district which has yielded many eminent British as well as the ancestors of most of the Puritans of New England, Quakers, and the Cavaliers of Virginia. The westward spread of the descendants of these immigrants clearly helps to explain the geographical contrasts in the yield of notables. Conversely, their partial submergence numerically in various areas by less productive stocks largely produced the subsequent decline in the per capita yield of notables in those areas.

A seventh theory is that outstanding leaders such as the starred scientists come from families that are especially alert, earnest, and ambitious, without respect to their racial backgrounds, and that such people tend to congregate in places of comparative opportunity for them to use their talents. Bits of evidence from the data as to the Indiana starred scientists which support this theory include: When southeastern Indiana was relatively favored, it produced many leaders, but because of the depletion of soil and forest wealth, and especially when greater opportunities opened elsewhere, many of the more ambitious people moved away. As a result, southeastern Indiana has yielded few starred scientists for many years. For example, none were born since 1880 in four of the southeastern counties which were especially productive earlier (Crawford, Jefferson, Switzerland, and Union). Likewise, not one was born since 1880 in the entire unglaciated part of the state. Indeed, all 42 counties south of Wayne, Johnson and Vigo have yielded only two since 1881, one in 1887 (Mann), and the other in 1901 (Twitty).

Another evidence of the selective migration of the parents of the starred scientists is that relatively many starred scientists were born in county seats, the local centers of greatest opportunity for talent. The considerable number born in college towns is another evidence. The fact that of the 30 born in Indiana since 1880, 12 were born in the Gas Belt of the late 1880's and 1890's is significant. The boom experienced there attracted relatively many ambitious people. Both of Indiana's Nobel Prize winners, Urey and Stanley, were born in the northern half of the state since 1892.

Another theory to explain the contrasts in yield of notables is that, from young people with the requisite ability, leaders come if they receive adequate encouragement from those close to them and from stimulating teachers, provided opportunities are afforded to them to develop their talents. Conversely, few become such leaders if sufficiently stimulating teachers are not available, and if they are not encouraged to prepare themselves adequately, and if opportunities to serve as leaders are not available. This theory has much support in Indiana.

Some Conclusions on Where the Scientists Come From

The areas which yield the most scientists are those which contain the most mentally alert, ambitious, persistent, and energetic people possessed of high ideals. Such people seek opportunities to use their abilities; they appreciate congenial associates and therefore congregate in desirable towns and in choice residential districts or suburbs.

Detailed studies here summarized strongly indicate that physical or geographic environmental influences in as favored a land as Indiana often affect indirectly the geographic yield of leaders by concentrating certain types of people rather than directly by affecting diet, occupation, health, and energy. A region relatively poor in resources usually comes, in time, to be peopled largely with those who are relatively lacking in ambition; the more favored areas attract people possessing relatively large amounts of resourcefulness and energy. In Indiana, the educational and political centers and the choice suburbs and residential sections of prosperous cities are favored areas. Notables and their parents are exceptionally mobile, alert to better their opportunities.

Men and women of distinction are a product of both environment and heredity, certainly not predominantly of one of these. It is essential that certain physical and mental qualifications be contributed by heredity. But numerous persons who possess the biological potentialities fail to become distinguished because of the lack of favorable environmental conditions.

Of great consequence in a youth's choice of a vocation—meteorology, merchandising, teaching, or professional gambling, for example—is encouragement from one or more persons whom he deeply respects. Such encouragement may change the direction of his life. Stimulating high school and college teachers are particularly significant. Specific illustrations of stimulating teachers are given in the discussion of starred scientists. Also significant is the influence of other highly-respected people in the community. The scientist's mother may exert a profound influence. A considerable number of scientists were children of educators and scientists. The success of others from the childhood community also has a bearing. Doubtless this influence helps to explain why certain small Indiana places yielded first one outstandingly successful scientist and later more scientists.

Highly significant in the yield of a particular place are the opportunities there for work in science. Some Indiana cities and towns have relatively many opportunities for able and earnest young people. This helps to explain the important yield of college towns, notably Lafayette and West Lafayette, where Purdue University and the United States Experiment Station operate.

Indiana Colleges and the Education of Indiana Scientists

Of these scientists, many graduated from an Indiana college or university. Indiana University conferred the college degree on 532, Purdue on 486, DePauw on 212, Wabash on 127, Notre Dame on 108, Earlham on 95, Butler on 75, Valparaiso on 51, Indiana State Teachers (Normal) College on 46, Rose Polytechnic on 43, Manchester on 31, Hanover on 21, Franklin on 19, Indiana Central on 15, Evansville on 11, Marion on ten, Taylor and Tri-State each on nine, Ball State, Goshen, and Oakland City each on eight, Moores Hill on six, Danville on four, Winona on two, and St. Joseph's and St. Mary's each on one. There were 1,924 bachelors' degrees from Indiana institutions. (Several scientists received a second college degree from a second Indiana school. This was especially true of graduates of Valparaiso.)

Native Hoosiers comprise the bulk of the graduates of the state-supported schools. More came from outside the state to attend Purdue University than to attend Indiana University. The non-state-supported institution with the largest percentage of its alumni from other states is DePauw; the next is Notre Dame; and the third, Earlham.

Of the scientists here studied, 784 received doctorates in Indiana: 361 from Purdue, 328 from Indiana University, and 95 from Notre Dame. All but a few of Notre Dame's total went to non-Hoosiers, as did most of Purdue's. By contrast, nearly two-thirds of Indiana University's doctorates went to Hoosiers. Purdue and Notre Dame both conferred doctorates on many of their faculty; a large share of Notre Dame's science faculty consists of local Ph.D.'s, as does almost half of Purdue's. Indiana University, however, has awarded few Ph.D.'s to its own faculty.

In the total number of their alumni sketched, Purdue and Indiana are far ahead. The institutions which have yielded most in proportion to total enrollments of men students are, however, Wabash, DePauw, Earlham, and Indiana, in that order. Wabash, Earlham, and Indiana were especially notable before 1910. In recent years, DePauw, first, and Purdue, second, have been outstanding. But Purdue has had many more men students in recent decades than has any other Indiana school—until recently nearly twice as many as Indiana University has had. As *Indiana Scientists* sketches many engineers and agriculturists, as well as the more conventional types of scientists, many of Purdue's alumni are included. Indeed, nearly a quarter of the scientists sketched are Purdue alumni or one-time faculty members.

In tabulating the place of college training of these scientists, it was interesting to note what a large fraction graduated near their birthplace. This illustrates again the importance of nearby colleges to a community's yield. The local reputations of Wabash and DePauw appear to have been especially good, as relatively few natives of their localities graduated elsewhere. In contrast, most of the 47 born in Richmond graduated outside of Indiana, as did many of the 163 born in Indianapolis. A considerable number from Lafayette and West Lafayette graduated at Indiana University, and several from Bloomington graduated at Purdue.

Characteristic of embryo scientists are that they are observing and earnestly seek better conditions. These traits tend to encourage them to attend colleges away from home, whose shortcomings may be less evident to them than are those of their local colleges.

Tabulation was made of only 139 masters' degrees, those conferred as the highest degree obtained. Of these, Indiana University conferred 76, Purdue, 54, and Notre Dame, nine. Each of these schools conferred masters' degrees on many other persons who later received a doctorate.

In Chapter III, some details concerning the contribution of the scientists of each of the Indiana colleges are given.

These Scientists' Contacts With Indiana Educationally

A series of tabulations were made relating to the educational contacts of these scientists. For example, of 2,003 born in Indiana, 585 were neither college-educated nor employed in Indiana, while 83 returned to Indiana for employment after having college training elsewhere.

Of 2,003 natives, 533 were both college-trained and employed in Indiana. A total of 151 natives received both college and graduate training in Indiana but found employment elsewhere.

A total of 292 natives of other states or countries who are here sketched as Indiana scientists graduated from Indiana colleges with the bachelor's degree but found work elsewhere. Persons who came to Indiana for their graduate training and then left the state totaled 706. (About half of these received their doctorate at Purdue.) Non-natives receiving both college and graduate degrees in Indiana but not subsequently employed in Indiana total 86. These various groups of non-natives who were not employed in Indiana total 1,084. Indiana alumni not Hoosiers but who were later employed in Indiana number 323.

Indiana Places of Employment of Scientists

The number of scientists depends to no small degree upon the number who can make a living as scientists. Many people who are not scientists have much curiosity and desire to discover new truth. Many also possess two other qualities needed: initiative and perseverance. Some of these might have become scientists if favorable conditions had prevailed. Consequently, the presence or absence of opportunities for able young scientists is highly significant.

Indiana has been the birthplace and the place of college education of many more scientists than the number to which it has afforded adequate opportunities in science to earn a living. Consequently, many scientists have had to enter non-scientific endeavors—largely teaching—or go to other states for employment.

A tabulation was made of the type and place of employment of those employed in Indiana. Educational institutions employed 1,528 and industry 853. Industrial firms are employing a sharply-increasing number. For example, a competent elderly Indiana scientist believes that in 1895 fewer than 25 scientists were working in Indiana industry in contrast to several hundreds in 1950.

Purdue University has been the leader by a wide margin in the number it has at one time or another employed: a total of 625. Indiana University has employed not many more than half that number, 349. Notre Dame has employed 110, DePauw 60, Wabash 51, Butler 45, Earlham 41, Rose Polytechnic 33, Valparaiso 33, Indiana State Teachers 27, Ball State 20, Evansville 19, Franklin 16, Hanover 11, Indiana Central 11, Manchester ten, Taylor ten, Marion nine, Vincennes eight, and Goshen seven. Employing four or five each have been Oakland City, St. Mary-of-the-Woods, Tri-State, and Danville.

Purdue's outstanding leadership in the number of Indiana scientists employed reflects at least three conditions. One is the aforementioned many opportunities for scientists in the United States Experiment Station there and in part-time teaching in the University, one of the largest in agriculture and engineering. A second is that masters' degrees or doctorates furnished part of the compensation to many of these scientists. A third explanation of the Purdue total is the fact that many remained for only a short time, perhaps no more than the two years' minimum necessary for listing in this book. Purdue has employed briefly numerous subsequently well-known scientists. Some of the faculty have remained for many years, but on the average, the annual turn-over has been relatively large. This is also true for Notre Dame and Valparaiso. Purdue's record of attracting professors from other Indiana institutions is notable.

Although Purdue has led by a wide margin in the number of scientists employed, Indiana University has led in the distinction of some of its faculty. Consistently since starring commenced in 1906, Indiana University has had most of the starred scientists in the state, generally over two-thirds of the state total. It has also had the only members of the National Academy of Sciences. Members of its faculty who have risen high in the scientific world after leaving are also far more numerous than for the other schools.

Indiana scientists who taught two or more years in Indiana public or, more frequently, high schools total at least 122. (A considerable number who do not mention—in the brief biographical sketches used in the compilation of the sketches of this book—that they taught in public or high schools are known to have done so.)

Among industrial firms in Indiana, two have been outstanding in employment of the scientists sketched. The Standard Oil Company of Indiana has employed 173, and Eli Lilly and Company 110. Both have employed many experts who have contributed notably to the advancement of science. Indeed, each has had a few starred scientists. A large majority of the Standard Oil scientists were from other states, as were somewhat more than half of the Eli Lilly group. But both companies have also employed many Indiana scientists, especially Ph.D.'s. (A total of 228 Ph.D.'s from the University of Chicago are sketched in this volume. Most of them have been employed by Standard Oil of Indiana, Eli Lilly, Purdue, or Indiana University.)

The third Indiana corporation in number of Indiana scientists employed is Commercial Solvents Company of Terre Haute, with 50. Concerns which have employed about a dozen are General Electric (all Indiana plants), Mead-Johnson (Evansville), Servel (Evansville), Pitman-Moore (Indianapolis), and Schenley (Aurora). Companies which have employed seven to nine are Bendix (South Bend), Magnavox (Ft. Wayne), Miles (Elkhart), Sinclair, and three Indianapolis firms, Presto-Lite, Reilly Tar, and Swan-Myers (now part of Abbott Laboratories, Chicago). Concerns employing four or five are Diamond Chain, Central Soya, Glidden, Grasselli, Linde, Seagrams', Studebaker, Van Camp, Universal Atlas Cement, and U. S. Rubber (Indiana plants).

More than a score of other Indiana companies have employed two or three of these scientists. Included are Allison, American Maize Products, and Conn (Elkhart). Many others employed one, a total of 109 in Indiana.

The special study reprinted in Chapter V of 2,653 scientists born, trained, or employed in Indiana and sketched in the seventh edition of *American Men of Science* presents some interesting details on employment. In brief, 63 per cent were employed by colleges or universities, 22.5 per cent by industry, ten per cent by government; nearly two per cent were "privately employed"; and nearly one per cent were employed by foundations and museums. Somewhat more than half of the chemists were employed by industry, but less than a sixth of the physicists were thus employed. Nearly all of the mathematicians were teachers, only about three per cent being employed by industry. Indeed, aside from chemists, physicists, engineers, bacteriologists, pharmacologists, and geologists, industry employed few of these scientists. Industry employs far more of the younger scientists than of the older.

Only six firms outside Indiana employed in 1943 more than six Indiana scientists; Dupont 40, Standard Oil Research Co. 14, Dow Chemical ten, American Cyanamide ten, Monsanto eight, Abbott Laboratories seven, and U. S. Rubber, Radio Corporation of America, Bell Telephone, Eastman Kodak, and Aluminum Co. of America, each six. In 1943, 221 firms employed one each, most of them not in Indiana. (No tabulation was made of the persons sketched in this volume as to employment in out-of-state concerns, but it is believed that the totals for 1950 were notably larger than those for 1943.)

Some Conclusions

Indiana has been the place of birth, of higher training, or of employment of numerous scientists, including some of the nation's most-honored. Some 490 Indiana cities, towns, and hamlets are designated by these scientists as their birthplace, and each Indiana county has been the birthplace of one or more. Some areas have, in proportion to their past populations, yielded exceptionally large numbers.

Contrasts in the yield of this valuable resource, scientific leadership, are of such profound social significance that prolonged, detailed studies of their causes are not only justified but highly desirable. The present study supplements, extends, and supports other studies and conclusions. Four of these conclusions may be summarized here.

(1) Encouragement or stimulation is deeply significant in the production of leaders. Indeed, although some business

men and a few others have bragged that they were "self-made," the evidence clearly indicates that no scientists are self-made. Encouragement is essential to the development of a scientist. This encouragement may come from one or more sources. If it comes from the immediate family, that is a great help. Some receive it from an especially stimulating high school teacher or college professor. Many scientists have acknowledged that encouragement from their mother was especially significant in their earlier years while a college teacher played a major role in their specialization and later career. Sometimes the stimulus comes from a friend or from a cousin, aunt, or uncle. The proved great significance of encouragement justifies each of us to be generous in encouraging our own more promising students and young friends. A few appreciative words may alter their lives.

(2) A second major influence facilitating the production of scientists is the presence of opportunity to obtain adequate training—and this presupposes the opportunity to obtain the benefits of studies made by previous workers in the field. The presence of several excellent educational institutions in Indiana is therefore highly significant. Since the most effective form of education is working individually with an able, enthusiastic specialist—not mere 'book learning' or mass lectures—the type of instructor available is of vital import. All interested in increasing the number of scientists should remember that individual instruction of a high order is almost essential.

(3) As nearly all scientists must earn a living, the opportunity to do so is essential if men and women are to become scientists. Employment close at hand is of great assistance, especially to beginners. It is evident that in the present world there is great need for more scientists and for greater scientific achievement in diverse fields. Hence, scientists should be more adequately recognized and should be afforded better opportunities for their work, which, in nearly all instances, is for the benefit of mankind and not solely for their personal gain. It is a reflection on the good name of Indiana that she has afforded comfortable living opportunities for so few scientists, except, perchance, indirectly, through teaching positions.

(4) Most fundamental in a favorable yield of scientists is the presence of a favorable biologic and cultural background.

An ever-increasing mass of evidence indicates that leaders in science come from families well above average in ability, earnestness, vigor, and ambition. Some productive families are found in unexpected places, often because the mother, the most significant parent biologically and culturally, married out of her cultural group. However, families which yield leaders are most numerous in favored communities, for example, college towns, county seats, and attractive suburbs. Such families are also relatively numerous in certain occupational groups, especially in the professional class and particularly among educators and the clergy. Productive families are also more numerous in some human stocks than in others, including, in Indiana, the Quakers, the Scots, the Yankees, and the early Germans. Wherever they are, it is evident that families distinctly above average biologically and culturally have an opportunity to contribute more than their proportionate share of leaders, and should be strongly encouraged to make earnest efforts to do so.

Of 2,596 scientists sketched in this volume who report being married, about a fourth have no children and nearly another fourth have only one. Exactly 40 per cent have two children and exactly 20, three. Hence, fewer than one-tenth have four or more children (55 have five, 11 have six, four have seven, and four have eight or nine).

If three children from each marriage are required to maintain the population, more than two-thirds of these scientists will become biologically extinct unless their offspring have more children than they themselves have had.

Obviously, the future of our country is somber if the bearing and rearing of the next generation is left largely to families poorly qualified biologically and culturally to rear children.

The deductions just mentioned are not merely academic. Everyone of us can aid somewhat. Let us resolve to do better than we have hitherto done with respect to encouraging potential scientists, partly by giving them more individual attention, and partly by increasing their opportunities to earn a living in science. Last, but not least, we should all endeavor to increase the number of children born into families qualified to produce future scientists.

CHAPTER II

BRIEF BIOGRAPHICAL SKETCHES OF INDIANA SCIENTISTS

Personal Information, Field of Study, and Educational and Employment Experience

ABBOTT, George A(lonzo), *Chemistry.* Alma, Ill, 7/7/74; m. 10, c. 2. B.S., DePauw, 95; Ph.D, Mass. Inst. Tech, 08. North Dakota, head dept, 10-47.

ABBOTT, John B., *Agriculture.* East Bethel, Vt, 1/5/83. M.S, Purdue, 09. Purdue, exp. sta, assoc. soil fertility, 08-14; deputy state chem, Ind, 07-09.

ABBOTT, R(aymond) B(arrington), *Physics.* Newton, Kans, 12/25/73. B.S, California, 08, M.S, 12, Ph.D, 19. Purdue, 21-47, prof, 34-47. Ind. Acad. Sci. (v.p, 44).

ABBOTT, T(albert) W(ard), *Chemistry.* Otwell, Ind, 8/21/92; m. 30, c. 2. A.B, Indiana, 18; Ph.D, Illinois, 28. Illinois, prof, 28-, dean, 45-.

ABEL, John J(acob), *Pharmacology, Physiological chemistry.* Cleveland, O, 5/19/57, died, 38. Ph.B, Michigan, 83. Ind. high schs, 79-80; Hopkins, prof, 93-32, dir. endocrine res. lab, 32-38. Natl. Acad. Sci; Am. Assn. Advancement Sci. (pres, 32).

ACHESON, L(ouis) K(ruzan), *Mechanical engineering.* Brazil, Ind, 12/31/99; m. 23, c. 2. B.S, Rose Poly. Inst, 22. Kruzan & Co. (Ind.), 23-28.

ADAMS, C(hester) E(lgin), *Organic chemistry.* Myrtle Point, Ore, 6/7/98; m. 26, c. 2. A.B, Oregon, 20; Ph.D, Iowa State Col, 25. Standard Oil Co. Ind, 27-, sect. leader, 47-. Waxes, antiseptics.

ADAMS, E(dgar) M., *Toxicology, Biochemistry.* Clinton, Ind, 12/29/08; m. 37, c. 3. A.B, DePauw, 30; Ph.D, Cincinnati, 34. Dow Chem. Co, 34-. Chemotherapy of pneumonia.

ADAMS, E(lmer) W(ade), *Organic chemistry.* Deer Park, Tex, 10/7/97. B.S, Illinois, 19; Ph.D, Wisconsin, 24. Standard Oil Co. Ind, 25-. Insecticides; lubricants.

ADAMS, H(enry) R(ichard), *Soils.* Mason, Mich, 1/29/96. B.S, Mich. State Col, 21, M.S, 24. Purdue, exp. sta, 24-26.

ADAMS, James E(dward), *Soils.* Lee's Summit, Mo, 7/5/98; m. 24. A.B, Wm. Jewell Col, 20; M.S, Purdue, 22; Ph.D, Iowa State Col, 36. Purdue, instr, 20-22.

ADAMS, (Samuel) Clifford, *Hydrology, Soil mechanics.* Rockville, Ind, 2/12/12; m. 38. A.B, Hanover Col, 35; Ph.D, Iowa, 42. Hanover, 35-, assoc. prof. geol, 45-. Soil erosion; ground water.

ADDINGTON, Arch R(ombough), *Geology.* Randolph Co, Ind, 2/23/94; m. 16, c. 2. A.B, Indiana, 22, A.M, 25. Indiana, instr, 23-28; Calif. State Col, prof, 28-. Subterranean drainage features of Indiana.

AHRENS, W(alter) E., *Forest pathology.* Huntingburg, Ind, 8/28/10. B.S.A, Purdue, 32. U. S. Dept. Agr, 33-. Dutch elm disease.

Universities are not generally so designated, but colleges are: Purdue, Rutgers; but Evansville Col, Vassar Col.

States, when used alone to designate universities and colleges, are spelled out, but when used as locations are abbreviated: Indiana for Indiana University, Iowa for State University of Iowa, but U. S. Naval Ordnance Plant (Ind.) and Studebaker Corp. (Ind.).

Indiana colleges and universities referred to herein, with their principal locations if different from their names: Ball State Teachers Col, Muncie; Butler, Indianapolis; Canterbury Col. (formerly Central Normal), Danville; DePauw, Greencastle; Earlham Col, Richmond; Gary Col. (now Indiana U. Calumet Extension Center); Indiana Asbury Col. (now DePauw); Indiana Central Col. Physicians and Surgeons, Indianapolis; Indiana Dental Col. (now Indiana U.); Indiana Medical Col. (now Indiana U.); Indiana Normal (formerly at Portland); Indiana State Normal Sch, now Indiana State Teachers Col, Terre Haute; Indiana Technical Col, Ft. Wayne; Indiana U, Bloomington; Manchester Col, North Manchester; Moores Hill Col. (now Evansville Col.); Northern Indiana Normal Sch. (now Valparaiso U.); North West Christian Col. (now Butler); Notre Dame, South Bend; Purdue, West Lafayette; Rose Polytechnic Institute, Terre Haute; St. Francis Col, Ft. Wayne; St. Joseph's Col, Collegeville; St. Mary's Col, Notre Dame; St. Mary-of-the-Woods Col, Terre Haute; Taylor, Upland; Tri-State Col, Angola; Wabash Col, Crawfordsville.

AIKEN, Charles B(ayne), *Engineering.* New Orleans, La, 10/6/02. B.S, Tulane, 23; Ph.D, Harvard, 33. Purdue, assoc. prof, 35-38.

ALBERT, J(ohn) P(aul), *Mathematics.* Mishawaka, Ind, 4/17/01; m, c. 1. B.A, Miami (O.), 24. Miami, 24-.

ALBERTS, A(rnold) A., *Chemistry.* Davis, S. Dak, 5/28/06; m. 31, c. 2. A.B, South Dakota, 28; Ph.D, Ohio State, 34. Purdue, asst. prof, 43-. Organic fluorine.

ALBERTSON, G(eorge) W(illiam), *Botany, Bacteriology.* Kalamazoo, Mich, 1/11/86, died, 29. Litt.B, Notre Dame, 14; Ph.D, Chicago, 21. Notre Dame, prof, 21-29.

ALBRIGHT, A(lan) R., *Organic chemistry.* Boston, Mass, 11/3/85; m. 14, c. 1. A.B, Ohio State, 09; Ph.D, Gottingen, 12. Best Foods, Inc. (Indianapolis), shoe polish div, 36-.

ALBURGER, H(enry) R(ihl), *Pathology.* Germantown, Pa, 4/16/74, died, 48. M.D, Pennsylvania, 02. Indiana, prof, 08-14; Indianapolis City Hosp, path, 11-16, 22-26.

ALDRED, J(acob) W(illiam) H(uber), *Chemistry.* Perkinsville, Ind, 4/23/95; m. 18, c. 2. A.B, Indiana, 17, A.M, 20, Ph.D, 29. Eli Lilly & Co, 17-18; Tenn. Valley Authority, 30-45. Beneficiation of phosphate ore.

ALDRICH, W(illiam) S(leeper), *Engineering, Education.* Philadelphia, Pa, 3/3/63, died, 41. Grad, U. S. Naval Acad, 83; M.E, Stevens Inst. Tech, 84. Am. Bridge Co. (Gary), 18-41.

ALEXANDER, C(lair) C., *Entomology.* Dayton, O, 12/3/12. B.S, Purdue, 38; M.S, Ohio State, 40. U. S. Dept. Agr. (Ind.), 40-. Coddling moths.

ALEXANDER, L(loyd) G(eorge), *Chemical engineering.* Lynn, Ind, 2/2/19; m. 42, c. 1. B.S, Purdue, 41, Ph.D, 48.

ALEY, Robert Judson, *Mathematics, Education.* Coal City, Ind, 5/11/63, died, 35; m. 84, c. 1. B.S, Valparaiso, 82; A.B, Indiana, 88, A.M, 90; Ph.D, Pennsylvania, 97. Ind. schs, 77-85; Vincennes, 88-91; Indiana, prof, 91-09; supt. pub. instr, Ind, 09-10; Maine, pres, 10-21; Butler, pres, 21-31.

ALFORD, T(homas) G(reene), *Mathematics.* Alfordville, Ind, 3/26/52, died, 17. A.B, Indiana, 71, A.M, 88. Teacher, Ind, 71-92; Purdue, prof, 92-17.

ALLARD, Romeo P(aul), *Chemistry.* Franklin, N. H, 11/13/06; m. 35, c. 3. B.S, Notre Dame, 31, M.S, 32, Ph.D, 34. Loyola, Calif, 35-.

ALLEE, W(alter) G(oldsberry), *Inorganic chemistry.* Bloomingdale, Ind, 9/22/82, died, 47. B.S, Earlham Col, 13.

ALLEE, W(arder) C(lyde), *Zoology* (starred). Bloomingdale, Ind, 6/5/85; m. 12, c. 3. B.S, Earlham Col, 08; Ph.D, Chicago, 12. Chicago, prof, 21-50. Animal aggregations.

ALLEN, B(ennet) M(ills), *Embryology* (starred). Greencastle, Ind, 7/4/77. Ph.B, DePauw, 98; Ph.D, Chicago, 03. California L.A, prof, 24-47. Origin and influence of sex cells.

ALLEN, Durward L(eon), *Vertebrate ecology.* Uniondale, Ind, 10/11/10; m. 35, c. 3. A.B, Michigan, 32, Ph.D, 37. Wildlife management in Michigan.

ALLEN, E(lbert) F(rank), *Mathematics.* Cloverdale, Ind, 1/21/90. A.B, Ind. State Nor. Sch, 15; Ph.D, Missouri, 23. Ind. pub. schs, 09-19; Okla. A. & M. Col, prof, 29-.

ALLEN, F(red) J(ohn), *Chemistry.* Elgin, Ore, 11/21/94; m. 22; c. 3. B.S. Oregon State Col, 17; Ph.D, Purdue, 30. Purdue, 22-. Krypton and zenon.

ALLEN, J(ohn) S(tuart), *Astronomy.* Pendleton, Ind, 5/13/07; m. 33. A.B, Earlham Col, 28; A.M, Minnesota, 29; Ph.D, N. Y. 36.

ALLEN, Martin, *Chemistry.* N. Y. C, 3/26/18; m. 42; c. 2. A.B, Brooklyn Col, 38; Ph.D, Minnesota, 44. Butler, assoc. prof, 47-.

ALLEN, R(olland) C(raten), *Geology.* Richmond, Ind, 5/24/81, died, 48. A.B, Wisconsin, 05, A.M, 08. State geol, Mich, 09-19.

ALLEN, W(illiam) R(ay), *Zoology.* Ossian, Ind, 3/8/85; m. 22, c. 3. A.B. Indiana, 13, A.M, 14, Ph.D, 20. Indiana, instr, 18-21; Kentucky, prof. 22-. Freshwater mussels.

ALLEN, W(infred) E(mory), *Biology.* West Newton, Ind, 6/6/73, died, 47. B.L, Earlham Col, 98. Earlham, 96-99; California, Scripps Institution, 19-47. Regeneration, phytoplankton.

ALLISBAUGH, H(oward) C(oss), *Immunology.* Sidney, Ind, 7/28/08; m. 34, c. 1. A.B, Manchester Col, 32; Sc.D, Hopkins, 34. Eli Lilly & Co, 34-47. Filterable viruses.

ALLISON, F(ranklin) E(lmer), *Biochemistry.* Oakland City, Ind, 11/10/92; m. 31. B.S, Purdue, 14; M.S, Iowa State Col, 15; Ph.D. Rutgers, 17. U. S. Dept. Agr, 28-. Soil microbiology; fertilizers.

ALLISON, L(owell) E(dward), *Soil chemistry.* Stryker, O, 9/19/04. B.S.A, Purdue, 30; Ph.B, Illinois, 42. Purdue, asst. prof, 37-. Phosphate in soil.

ALLISON, R(obert) V(errill), *Soils.* Stryker, O, 6/25/95. B.S, Purdue, 20; M.S, Rutgers, 22, Ph.D, 23.

ALLMAN, Delmar I(saac), *Physical education.* Remington, Ind, 10/3/95; m. 26, c. 3. B.S, Mich. State Nor. Col, 28; Dr. P.H, Michigan, 36.

ALLPORT, G(ordon) W(illard), *Psychology* (starred). Montezuma, Ind, 11/11/97. A.B, Harvard, 19, Ph.D, 22. Harvard, prof, 30-. Personality; social psychology.

ALMQUIST, John, O(lson), *Dairy husbandry.* Holdrege, Nebr, 2/10/21; m. 42, c. 2. B.S, Cornell, 42; M.S, Purdue, 44; Ph.D, Pa. State Col, 47. Purdue, 42-44.

ALTER, Chester M., *Chemistry.* Rushville, Ind, 3/21/06; m. 33, c. 1. B.S, Ball State Teachers Col, 27; A.M, Indiana, 28; Ph.D, Harvard, 36. Boston, 22-47, dean grad. sch, 45-47.

ALTER, J. Cecil, *Meteorology.* Near Rensselaer, Ind, m. 04, c. 3. Purdue; Valparaiso. U. S. Weather Bur, 02-12, 41-49; Ut. State Weather Serv., 17-41.

AMATA, Sister (Rosalie McGlynn), *Chemistry.* Chicago, Ill, 7/23/91, died, 37. Ph.D, Indiana, 29. St. Mary-of-the-Woods, prof, 29-37.

AMATORA, Sister M(ary) (Tschechtelin), *Psychology.* Logansport, Ind, 4/24/04. B.S, Indiana, 37; Ph.D, Purdue, 42. St. Francis Col. (Ind.), prof, 38-47. Personality studies.

AMICK, Chester A(lbert), *Chemistry.* Scipio, Ind, 4/19/95; m. 25, c. 3. A.B, Indiana, 20, A.M, 21. Ind. high schs, 21-25. Yarns and fabrics.

AMICK, W(illiam) Robert, *Agriculture.* Scipio, Ind, 2/20/03. B.S.A, Purdue, 25, M.S, 35. Ind. schs, 25-28; Purdue, 28-42.

AMMEN, Jacob, *Mathematics.* Botetourt Co, Va, 1809. Indiana, prof, 1840-43.

AMOS, John M(adison), *Entomology.* Mulberry, Ind, 8/10/10. B.S.A, Purdue, 32, M.S.A, 33. Delaware, exp. sta, 37-. Strawberry weevil.

ANDEREGG, F(rederick) O(sband), *Chemistry.* Oberlin, O, 9/20/87; m. 44, c. 5. A.B, Oberlin Col, 10; A.M, Harvard, 12, Ph.D, 15. Purdue, 18-26, assoc. prof, 25-26. Efflorescence and staining of Indiana limestone; cement.

ANDERSON, H(arry) W(arren), *Botany.* Ladoga, Ind, 10/14/85; m. 14, c. 2. A.B, Wabash Col, 07, M.A, 10; Ph.D, Illinois, 17. Wabash Col, 08-17, prof, 12-17; Illinois, prof, 31-. Antibiotics; bacterial diseases.

ANDERSON, James R(ichard), *Geography.* Whitaker, Ind, 11/20/19; m. 46, c. 2. B.S. Indiana, 41, B.A, 47, M.A, 47; Ph.D, Maryland, 50. Maryland, 47-, asst. prof, 50-. Geography of Morgan County, Ind.

ANDERSON, J(ohn) A(rthur), *Chemistry.* Chicago, Ill, 1/24/00. B.S, Illinois, 22; Ph.D, Yale, 26. Standard Oil Co. Ind, 27-.

ANDERSON, J(ohn) A(ugust), *Astronomy* (starred). Rollag, Minn, 8/7/76. B.S, Valparaiso, 00; Ph.D, Hopkins, 07. Mt. Wilson Observ, Carnegie Institution, 16-. Spectroscopy. Mem. Nat. Acad. Sci.

ANDERSON, Malcolm S(tormont), *Chemistry.* Stewartsville, Ind, 5/22/10; m. 34, c. 1. Ind. State Teachers Col, 28-29. Mickiana Prods. Corp. (Ind.), 37-43; C. G. Conn. Ltd. (La Porte, Ind.), 44-. Electroplating.

ANDERSON, O(scar) G(ustaf), *Horticulture.* Gardner, Mass, 8/5/88. B.S, Mass. Col. Purdue, 14-, assoc. prof, 19-22, prof, 22-. Sprays; the Japanese beetle.

ANDERSON, P(aul) J(ohnson), *Botany.* Ladoga, Ind, 3/27/84; m. 17, c. 2. A.B, Wabash Col, 10; Ph.D, Cornell, 14. Tobacco research.

ANDERSON, Philip P(endleton), Jr, *Physical chemistry.* Calvert, Tex, 9/20/10. B.S, Texas, 31, Ph.D, 36. Servel, Inc. (Evansville), res. eng, 36-. Corrosion; absorption.

ANDERSON, R(ichard) L., *Mathematical statistics.* North Liberty, Ind, 4/20/15; m. 46. A.B, DePauw, 36; Ph.D, Iowa State Col, 41. N. C. State Col, 41-.

ANDERSON, Robert Clarke, *Toxicology.* Salem, Ind, 2/19/11; m. 34, c. 3. B.S, Purdue, 31. Eli Lilly & Co, 31-, head dept, 46-. Antihistamine.

ANDRES, Paul G(erhard), *Electrical engineering.* Kitchener, Ont, Can, 5/14/92. B.S, Mich. State Col, 18, E.E, 23. P. R. Mallory & Co, (Indianapolis), 31-34; ch. state radio eng, Ind, 34-36.

ANDREWS, Carl B(owers), *Engineering.* Pahala, Hawaii, 4/17/79. B.S, Rose Poly. Inst, 08, M.S, 09, C.E, 17. Hawaii, prof, 20-43.

ANDREWS, Frank M(arion), *Botany.* Vienna, Ind, 7/27/72, died, 40. A.B, Indiana, 94, A.M, 95; Ph.D, Leipzig, 02. Indiana, 94-40, prof, 22-40. Ind. Acad. Sci. (pres. 21). Physiological botany.

ANDREWS, Frederick N(ewcomb), *Physiology.* Boston, Mass, 2/5/14; m. 38, c. 2. B.S, Mass. State Col, 35, M.S, 36; Ph.D, Missouri, 39. Purdue, 44-, assoc. prof, 45-. Reproduction; endocrinology.

ANDREWS, James C(larence), *Biological chemistry.* Colfax, Ind, 3/8/92; m. 18, c. 2. B.S, Iowa, 15; Ph.D, Columbia, 18. North Carolina, prof, 37-. Sulfur compounds; amino acids.

ANDREWS, John S(cott), *Parasitology.* New Palestine, Ind, 10/1/05; m. 41, c. 1. B.S, Purdue, 27, M.S, 29; D.Sc, Hopkins, 38. U.S. Dept. Agr, 29-.

ANDRUS, L(ucius) B(uckley), *Electrical engineering.* Columbus, O, 9/22/75, died, 47. E.E, Ohio State, 10; M.S, Notre Dame, 16. Ind. and Mich. Elec. Co, gen. supt, 04-17; pres, various Ind. light cos, 17-47.

ANKRUM, Paul Denzil, *Electrical engineering.* Hamlin, Kan, 8/14/15; m. 40. B.S, Ind. Tech. Col, 35; A.B, Ashland Col, 39; M.S, Cornell, 44. Ind. Tech. Col, instr, 36-42; Cornell, 44-.

ANTHONY, Harvey Mitchell, *Electrical engineering.* Muncie, Ind, 2/90. A.B, Harvard, 14; B.S, Indiana, 24. Ind. State Bd. Eng. Examiners, pres. Storage batteries.

ANTHONY, Robert (Louis), *Physics.* Ft. Recovery, O, 5/6/12; m. 38, c. 4. A.B, Miami (O.), 33; Ph.D, Yale, 36. Notre Dame, 37-, assoc. prof, 40-. High polymers.

ANZILOTTI, Willard F(rancis), *Chemistry.* Chicago, Ill, 7/11/13; m. 38, c. 4. B.S, Northwestern, 35; Ph.D, Notre Dame, 40. Notre Dame, instr, 38-40. Acetylene.

ARBOGAST, J(ohn) L(ynn), *Clinical pathology.* Forreston, Ill, 3/27/04; m. 36, c. 2. A.B, Ind. Cent. Col, 25; M.D, Indiana, 36. Purdue, instr, 41-42; Indiana, assoc. prof, 46-.

ARBUCKLE, Wendell S(herwood), *Dairy manufacturing.* Scottsburg, Ind, 3/16/11; m. 41, c. 2. B.S.A, Purdue, 33; Ph.D, Missouri, 40. Earlham Col, 33-36. Milk fat.

ARM, David L(ehr), *Mechanical engineering.* Easton, Pa, 6/15/04; m. 34. B.S, M.E, Lafayette Col, M.S, 37. Purdue, 37-41, assoc. prof, 40-41.

ARMSTRONG, Walter J(unior), *Chemical engineering.* Fulton, Ind, 4/22/17; m. 41, c. 2. B.S, Mich. Col. Min. and Tech, 40; M.S, Iowa, 41. Armour Res. Found, 41-.

ARNDT, Charles H(omer), *Plant physiology.* Jonestown, Pa, 10/14/92; m. 21, 33, c. 2. A.B, Lebanon Valley Col, 14; M.S, Purdue, 16; Ph.D, Pennsylvania, 21. Clemson Col, exp. sta, 30-.

ARNOLD, C(harles) R(ichard), *Chemical engineering, Industrial bacteriology.* Boise, Idaho, 2/28/11. B.S, Idaho, 34; M.S, Iowa State Col, 36, Ph.D, 38. Am. Maize Prods. Co. (Munster, Ind.), 39-.

ARNOLD, Joseph Norman, *Engineering.* Alamorgordo, N. Mex, 6/17/04; m. 28, c. 2. E.E, Cincinnati, 27; M.S, Purdue, 33. Purdue, 30-, assoc. prof, 43-.

ARNOLD, Richard T(homas), *Organic chemistry.* Indianapolis, Ind, 6/18/13. B.Ed, Ill. State Teachers Col, 34; M.S, Illinois, 35, Ph.D, 37. Minnesota, prof, 37-.

ARNOLD, R(obert) B(acon), *Chemical engineering.* Terre Haute, Ind, 2/17/81; m. 29, c. 2. B.S, Rose Poly. Inst, 03, M.S, 10. Tobacco By-Prods. & Chem. Corp, dir. res, 25-.

ARNOLD, Robert C(harles), *Chemistry.* West Unity, O, 7/29/21; m, c. 1. B.Sc, Ohio State, 43, M.Sc, 45, Ph.D, 47. Standard Oil Co. Ind, 49-.

ARNOLD, W(illiam) Clarke, *Mathematics.* Macy, Ind, 3/18/98; m. 27, c. 2. A.B, DePauw, 20; M.S, Chicago, 23. DePauw, 23-, assoc. prof, 34-.

ARTHUR, J(oseph) C(harles), *Botany* (starred). Lowville, N. Y, 1/11/50, died, 42. B.S, Iowa State, 72, M.S, 77; Hopkins, 78-79; Sc.D, Cornell, 86. Purdue, prof, 87-15. Bot. Soc. (pres. 02, 19); Ind. Acad. Sci. (pres, 93). Plant rusts; uredinales.

ARTHUR, Paul, *Chemistry.* Terre Haute, Ind, 4/5/07; m. 35. B.S, Huron Col, 31; Ph.D, N. Y. U, 36. Okla. A. & M. Col, prof, 35-. Ultra-violet absorption spectroscopy.

ARTIN, Emil, *Mathematics* (starred). Germany. Ph.D, Leipzig, 21. Indiana, prof, 39-44; Princeton, prof, 44-.

ARTMAN, Robert A(rthur), *Physics.* Freeport, Ill, 9/23/15; m. 38, c. 2. A.B, Ill. Col, 37; M.S, Iowa, 39. Evansville Col, assoc. prof, 46-.

ARVESON, M(aurice) H(enshaw), *Chemistry.* Antigo, Wis, 11/28/02. A.B, Lawrence Col, 24. Standard Oil Co. Ind, 24-, patent adv, 31-35, tech. adv, 35-.

ARVIN, Martin J(oseph), *Physics.* Montgomery, Ind, 4/9/02; m. 36, c. 3. A.B, Ind. State Teachers Col, 26; M.S, Illinois, 30, Ph.D, 34. Ind. pub. schs, 19-26.

ARZBERGER, Frederick C(ornelius), *Microbiology.* Helenville, Wis, 1/12/94; m. 27. B.S, Wisconsin, 26. Commercial Solvents Corp. (Terre Haute), 22-, head microbiol. res, 42-.

ASHBY, Carl T(oliver), *Physical chemistry.* Vale, Ark, 6/26/05. A.B, Texas, 29, A.M, 31, Ph.D, 34. Servel, Inc. (Evansville), 34-.

ASHER, E(ston) J(ackson), *Psychology.* London, Ky, 6/25/01; m. 22, c. 4. A.B, Kentucky, 23, A.M, 24; Ohio State, 35-36. Purdue, chm. dept. 45-.

ASHLEY, Geo(rge) H(all), *Geology* (starred). Rochester, N. Y, 8/9/66; m. 95, c. 2. M.E, Cornell, 89; A.M, Stanford, 92, Ph.D, 94. Asst. state geol, Ind, 96-00; state geol, Pa, 19-46. Indiana coals.

ASHLEY, Kenneth D(avid), *Chemistry*. Ft. Wayne, Ind, 10/7/92; m. 21, c. 2. B.S, Purdue, 19. Am. Cyanamid Co, 23-.

ASHLYE, Carlyle Martin, *Engineering*. Indianapolis, Ind, 8/17/99; m. 26, c. 4. M.E, Cornell, 24. Carrier Corp, 24-.

ASHMAN, G(eorge) C(romwell), *Chemistry*. Frankfort, Ind, 8/19/69; m. 05, c. 1. B.S, Wabash Col, 95; M.S, Chicago, 05, Ph.D, 08. Wabash Col, 95-96; Ind. high schs, 96-01.

ASHTON, Floyd M(ilton), *Biochemistry*. Indianapolis, Ind, 1/27/22; m. 42, c. 1. B.S, Illinois, 47. Prest-O-Lite Battery Co. (Ind.), 40-42; Eli Lilly & Co, 45-46. Plant growth stimulators.

ASHTON, Fred(eric) W(illiam), *Chemistry*. Saguache, Colo, 7/27/87; m, c. 2. A.B, Washington (Seattle), 12, M.S, 15. Universal Atlas Cement Co. (Buffington, Ind.), petrographer, 36-.

ASIMOW, Morris, *Engineering*. Milwaukee, Wis, 11/27/06; m. 28, c. 2. B.S, California, 27, M.S, 31, Ph.D, 34. Carnegie-Ill. Steel Corp. (Gary), res. metal, 36-40.

ASTLE, Melvin J(ensen), *Organic chemistry*. Afton, Wyo, 5/8/10; m. 40, c. 3. B.S, Utah, 32, M.S, 34; Ph.D, Purdue, 42. Purdue, 38-41.

ATKINSON, F(rederick) C(ornelius), *Chemistry*. Newton, Ala, 1/13/81. B.S, Ala. Poly. Inst, 02, M.S, 03. Scientech Club (Indianapolis) (pres, 21).

ATWOOD, Kenton, *Physical chemistry*. Cincinnati, O, 6/11/16; m. 43, c. 1. B.S, Wilmington Col, 36; Ph.D, California, 40. Jos. E. Seagram & Sons (Ind.), 41-44.

AULT, E(ugene) Stanley, *Mechanical engineering*. Baltimore, Md, 6/9/98; m. 22, c. 5. B.E, Hopkins, 20; M.E, Cornell, 21, M.M.E, 24. Purdue, prof, 37-.

AUSPOS, Lawrence A(rthur), *Chemistry*. Anoka, Minn, 8/27/17; m. 45, c. 1. B.S, Portland, 40; M.S, Notre Dame, 41, Ph.D, 43. Dupont Co, 43-.

AUSTIN, George T(homas), *Chemical engineering*. Salem, Ill, 6/6/14; m. 37, c. 2. B.S, Illinois, 36; Ph.D, Purdue, 43. State Col. Wash, assoc. prof, 47-.

AUSTIN, Robert J(ackson), *Chemistry*. Bisbee, Ariz, 8/13/07; m. 34, c. 2. B.S, Kentucky, 33, M.S, 34. Standard Oil Co. Ind, 36-.

AUSTIN, Stanley (William), *Plant physiology*. Freeland Park, Ind, 12/5/05. A.B, Iowa, 29, M.S, 30, Ph.D, 33.

AYRES, Gilbert H(aven), *Chemistry*. Upland, Ind, 8/29/04; m. 26, c. 2. A.B, Taylor, 25; Ph.D, Wisconsin, 30. Taylor, instr, 25-27; Texas, 37-.

AYRES, H(iram) D(outhitt), *Physics*. College Hill, Ky, 5/30/78. A.B, DePauw, 02; A.M, Cornell, 04, Ph.D, 13. DePauw, 02-, prof, 26-38, emer, 38-.

AYRES, W(illiam) L(eake), *Mathematics*. Gatesville, Tex, 6/26/05; m. 26, c. 3. A.B, Southwestern (Tex.), 23; Ph.D, Pennsylvania, 27. Purdue, 41-, head dept, 41-46, dean sch. sci, 47-. Topology.

BABCOCK, C(larence) L(loyd), *Physics*. Paoli, Ind, 8/30/04; m. 29, c. 3. B.S, Ball State Teachers Col, 28; M.S, Purdue, 31, Ph.D, 36. Ind. high schs, 28-30; Purdue, 30-35; Owens-Ill. Glass Co, 35-.

BABCOCK, Rodney W(hittemore), *Mathematics*. Milton, Vt, 7/22/90; m. 15, c. 3. A.B, Missouri, 12; A.M, Wisconsin, 15, Ph.D, 24. Evansville Col, prof, 12-14; DePauw, prof, 29-30; Kans. State Col, dean, 30-.

BABEL, Fred J(ohn), *Dairy Industry*. Traverse City, Mich, 10/22/11; m. 39. B.S, Mich. State Col, 35; M.S, Purdue, 36; Ph.D, Iowa State Col, 39. Purdue, prof, 47-. Cheese; ice cream.

BACHMAN, G(ustave) B(ryant), *Chemistry*. Kansas City, Mo, 8/12/05; m, c. 3. A.B, Colorado, 26; Ph.D, Yale, 30. Purdue, prof, 39-. Plastics; rubbers.

BACHMAN, P(aul) W(illiam), *Chemistry*. Newport News, Va, 8/28/99; m. 32, c. 2. B.S, Hopkins, 23, Ph.D, 26. Commercial Solvents Corp. (Terre Haute), 42-, mgr. tech. develop. div, 46-.

BACHOFER, C(letus) S(helley), *Biology*. Salina, Kan. A.B, Notre Dame, 45; Ph.D, Chicago, 48. Notre Dame, instr, 44-45, 48-. Fresh-water biology.

BACON, Franklin J(ames), *Pharmacognosy, Botany*. New London, Wis, 11/11/98; m. 20, c. 1. Ph.G, Wisconsin, 18, B.S, 20, M.S, 23, Ph.D, 25. Eli Lilly & Co, 20-22; Western Reserve, 27-.

BACON, Raymond F(oss), *Chemistry* (starred). Muncie, Ind, 6/29/90; m. 05, c. 2. B.Sc, DePauw, 99, A.M, 00, hon. Sc.D, 19; Ph.D, Chicago, 04. DePauw, instr, 99-00; Vincennes, prof, 00-01; Mellon Inst, 11-22.

BADERTSCHER, D(arwin) E(arl), *Organic chemistry*. Beaverdam, O, 9/10/08; m. 30, c. 3. A.B, Indiana, 29; M.S, Pa. State Col, 31, Ph.D, 34. Socony-Vacuum Oil Co, 34-.

BADERTSCHER, J(acob) A., *Histology*. Bluffton, O, 1/11/79; m. 04, c. 2. Ph.B, Ohio (Athens), 09, Ph.M, 10; Ph.D, Cornell, 14. Indiana, 14-49, prof, 21-49. Muscle degeneration; thymus; pineal gland.

BADOLLET, Marion Smith, *Chemistry*. Vincennes, Ind, 11/27/95. B.S, Missouri, 20, M.S, 21, Chem.E, 26. Johns-Manville Corp, in chg. res, 29-.

BAHLKE, W(illiam) H(erbert), *Physical chemistry*. Baltimore, Md, 11/7/95; m. 21, c. 3. B.S, Richmond, 16; Ph.D, Hopkins, 21. Standard Oil Co. Ind, 22-48, dir. Whiting lab, 35-39, assoc. dir. res, 40-48.

BAILEY, Alson H(unnicutt), *Mathematics*. Wilmington, O, 8/17/08. B.S, Wilmington Col, 30; A.M, Haverford Col, 31; Ph.D, Ohio State, 36. Cent. Nor. Col, 36-37; Purdue, instr, 37-42.

BAILEY, John Hays, *Bacteriology*. Chicago, Ill, 5/3/00; m. 39, c. 2. B.S, Chicago, 24, Ph.D, 28; Dr.P.H, Michigan, 38. Indiana, Riley Hosp. and sch. med, 29-32.

BAILEY, M(aurice) E(ugene), *Physical chemistry*. Portsmouth, O, 3/14/16. A.B, Ohio Wesleyan, 37; M.S, Purdue, 39, Ph.D, 41. Allied Chem. & Dye Corp, Natl. Aniline Div, 41-.

BAILEY, Ralph H(unter), *Chemistry*. Southport, Ind, 2/4/92; m. 22, c. 2. A.B, Wabash Col, 15. Pac. Indust. Chem. Corp, 31-46.

BAILIE, J(ames) C(lyde), *Organic chemistry*. Pittsburg, Kans, 5/17/11; m. 39, c. 2. A.B, Illinois, 33; M.S, Kans. State Teachers Col, 34; Ph.D, Iowa State Col, 38. Standard Oil Co. Ind, 38-, asst. ch. chem, 46-.

BAIN, H(arry) Foster, *Geology* (starred). Seymour, Ind, 11/2/71, died, 41. B.S, Moores Hill Col, 90; Ph.D, Chicago, 97. U. S. Bur. Mines, dir, 20-25. Ore deposits; mining methods.

BAINES, R(ichard) C(ecil), *Plant pathology*. Birkenhead, Eng, 6/13/05. B.S, California, 27; M.S, Purdue, 31, Ph.D, 37. Purdue, exp. sta, 31-, asst. prof, 38-. Fungicides.

BAKE, Louis Samuel, *Chemistry*. Anderson, Ind, 11/21/96; m. 21, c. 2. B.S, Rose Poly. Inst, 18, Ch.E, 41. Neoprene.

BAKER, C(larence) E(verett), *Horticulture*. Champaign, Ill, 11/1/96. B.S, Illinois, 20; M.S, Purdue, 29, Ph.D, 36. Purdue, exp. sta, 20-.

BAKER, E(dgar) G(ates) Stanley, *Biology*. Peotone, Ill, 6/7/09; m. 35, c. 2. A.B, DePauw, 31; Ph.D, Stanford, 43. Wabash Col, 32-39, asst. prof, 35-39.

BAKER, Griffin J(onathan), *Entomology*. Marion, Ill, 7/19/17; m. 47, c. 1. B.Sc, Illinois, 40, 42-43. Standard Oil Co. Ind, 46-.

BAKER, Ira O(sborn), *Civil engineering*. Linton, Ind, 9/23/53, died, 25. B.S, Illinois, 74, C.E, 77. Illinois, prof, 80-.

BAKER, L(awrence) M(anning), *Psychology*. Laurel Creek, Ky, 1/23/07; m. 34, c. 3. A.B, Berea Col, 29; A.M, Kentucky, 32, Ph.D, 33. Purdue, assoc. prof, 47-. Projective tests.

BAKER, Maurice O(liver), *Chemistry*. Culver, Ind, 2/11/06; m. 29, c. 1. A.B, Wabash Col, 28; Ph.D, Cornell, 32. Shell Oil Co, 35-.

BAKER, Merl, *Mechanical engineering*. Cadiz, Ky, 7/11/24; m. 46. B.S, Kentucky, 45; M.S, Purdue, 48. Purdue, 46-48.

BAKER, Philip John, Jr, *Organic chemistry*. Lansing, Mich, 4/14/15; m. 47. B.S, Mich. State Col, 36; Ph.D, Northwestern, 41. Commercial Solvents Corp. (Terre Haute), 40-.

BAKER, Philip S(chaffner), *Chemistry*. Minneapolis, Minn, 11/30/16; m. 44, c. 2. A.B, DePauw, 38; Ph.D, Illinois, 43.

BAKER, Ross A(llen), *Chemistry*. Greencastle, Ind, 11/13/86; m. 14, c. 5. A.B, DePauw, 06, A.M, 07, hon. Sc.D, 37; Ph.D, Wisconsin, 14. Syracuse, prof, 19-30; col. city N. Y, prof, 30-. Preparation of alkaline earth metals.

BAKER, Weldon N(icholas), *Physical chemistry*. Mt. Vernon, Ia, 7/15/09; m. 36, c. 5. A.B, Morningside Col, 30; M.S, Iowa, 31; Ph.D, Columbia, 35. Rose Poly. Inst, instr. chem. eng, 37-44, asst. prof, 40-44. Thermo-setting plastics.

BAKER, William Franklin, *Medicine*. Lafayette, Ind, 9/10/83, died, 27. B.S, Indiana, 09, M.D, 11. Eli Lilly & Co, 11-15.

BAKER, William Kaufman, *Zoology*. Portland, Ind, 12/2/19; m. 44, c. 1. B.A, Col. Wooster, 41; M.A, Texas, 43, Ph.D, 48. Radiation; genetics.

BAKES, Stanley E(ugene), *Chemical engineering*. Cincinnati, O, 12/12/15. Ch.E, Cincinnati, 39. Schenley Distillers, Inc. (Ind.) 48-.

BALCOM, Stephen Francis, *Engineering*. Vicksburg, Miss, 1/24/56, died, 24; m. 80. B.S, Illinois, 75. In Indianapolis, 97-24; aided City Park Bd. Am. Indian archaeology.

BALDINGER, Lawrence H(enry), *Pharmacy*. Galion, O, 1/12/07; m. 29, c. 4. Ph.C, Western Reserve, 28, B.S, 29; M.S, Notre Dame, 31, Ph.D, 33. Notre Dame, 29-, head dept, 33-39, prof, 43-, dean col. sci, 43-. Oil of peppermint and synthetic medicinals.

BALDWIN, George J(esse), *Physics.* Elkhart, Ind, 5/21/01. A.B, Notre Dame, 24; M.A, Catholic U, 29; Chicago, 34-37. Notre Dame, asst. prof, 39-. Nuclear physics; electronics.

BALDWIN, I(ra) L(awrence), *Bacteriology.* Oxford, Ind, 8/20/95; m. 20, c. 2. B.S.A, Purdue, 19, M.S.A, 21; Ph.D, Wisconsin, 26. Purdue, 19-26, asst. prof, 24-25; Wisconsin, dean grad. sch, 44-45, dean col. agr, 45-, dir. exp. sta, 45-. Bact. Soc. (ex-pres.).

BALDWIN, Mark, *Soils.* Ellis, Kans, 6/8/89. B.S, Earlham Col, 12, hon. Sc.D, 33. U. S. Dept. Agr, soil sci, 12-.

BALDWIN, Robert R(ussel), *Biophysics.* Chicago, Ill, 11/15/16; m. 44, c. 1. A.B, DePauw, 38; Ph.D, Iowa State Col, 43. Starch.

BALLEISEN, Charles Edward, *Mechanical engineering.* Philadelphia, Pa, 10/2/11; m. 40. B.S, Drexel Inst. Tech, 33; M.S, Mass. Inst. Tech, 34. Purdue, assoc. prof, 46-48.

BALLENGER, H(oward) C(harles), *Medicine.* Economy, Ind, 8/17/86; m. 12, c. 3. Earlham Col, 06-07; Michigan, 07-10; M.D, Indiana, 11.

BANDY, Orville L(ee), *Geology.* Linden, Ia, 3/31/17; m. 43; c. 1. B.S, Oreg. State Col, 40, M.S, 41; Ph.D, Indiana, 48.

BANG, Haakon, *Pharmaceutical chemistry.* Devils Lake, N. Dak, 6/3/05; m. 46. Ph.C, B.S, State Col. Wash, 27, M.S, 31; Ph.D, Purdue, 42.

BANIGAN, T(homas) F(ranklin), Jr, *Chemistry.* Dover, N. J, 9/22/20; m. 46. B.S, Notre Dame, 42, M.S, 43, Ph.D, 46. Sinclair Ref. Co. (Ind.), 46-48.

BANKER, Howard J(ames), *Mycology.* Schaghticoke, N. Y, 4/19/66, died, 40. A.B, Syracuse, 92; A.M, Columbia, 00, Ph.D, 06. DePauw, prof, 04-34. The Hydnaceae.

BANKOFF, S(eymour) George, *Chemical engineering.* N.Y.C, 10/7/20; m. 44, c. 2. B.S, Columbia, 40, M.S, 41. Sinclair Ref. Co. (Ind.), 41-42; Rose Poly. Inst, asst. prof, 48-.

BANTA, A(rthur) M(angun), *Zoology* (starred). Greenwood, Ind, 12/31/77, died, 46. A.B, Indiana, 03, A.M, 04; Ph.D, Harvard, 07. Ind. schs, 95-01; Carnegie Institution, 09-37. Effects of selection; sex control.

BANTA, C(lifford), *Chemistry.* Marshall, Ind, 11/24/92. A.B, Wabash Col, 15; A.M, Colorado, 16; Ph.D, Mass. Inst. Tech, 22. Standard Oil Co. Ind, 22-24; Dupont Co, 33-.

BARBER, C(harles) M(elvin), *Zoology.* La Porte, Ind, 12/27/76. Study of mammals of New Mexico, 99-.

BARBER, M(arshall) A(lbert), *Malariology.* Crown Point, Ind, 11/22/68. A.B, Kansas, 91; A.B, Harvard, 92, A.M, 94, Ph.D, 07. U. S. Pub. Health Serv, 20-29; Rockefeller Found, 29-39. Malaria prevention.

BARBOUR, E(rwin) H(inckley), *Paleontology.* Springfield, Ind, 60(?), died, 47. A.B, Yale, 82, Ph.D, 87. Nebraska, res. prof, 91-41; state geol, Neb, 91-26. Vertebrate paleontology.

BARD, R(aymond) C(amillo), *Bacteriology.* New Britain, Conn, 8/26/18; m. 40, c. 2. B.S, City Col. N. Y, 38; M.A, Indiana, 47, Ph.D, 49. Indiana, 49-, asst. prof, 50-.

BARDEN, R(obert) B(radshaw), *Embryology, Histology.* Mishawaka, Ind, 5/30/10; m. 37, c. 3. A.B, Wabash Col, 35; Ph.D, Stanford, 41.

BARINGER, John W(illiam), *Plant pathology.* Jamestown, Ind, 8/30/95. A.B, Wabash Col, 18; M.S, Ohio State, 24. U. S. Dept. Agr, 18-30. Barberry and rust.

BARKER, M(aurice) E(ugene), *Chemistry.* Humboldt, Tenn, 5/20/94. B.S, Valparaiso, 15; Sc.D, Mass. Inst. Tech, 30. Chem. Warfare Serv, 38-.

BARKER, R(obert) S(amuel), *Organic chemistry.* N.Y.C, 2/1/18; m. 44, c. 2. B.S, California, 40; Ph.D, Purdue, 48. Pharmaceuticals.

BARKLEY, Grace, *Botany.* Henriette, Mo, 2/23/78, died, 30. A.B, Missouri; M.Sc, Chicago, 22, Ph.D, 26. DePauw, asst. prof, 26-30.

BARLOW, H(oward) W(alter), *Aeronautical engineering.* Buffalo, N. Y, 7/27/03; m. 28, c. 2. B.S, Purdue, 27; M.S, Minnesota, 34; Sc.D, N. Y. U, 41. Texas, dean eng, dir. eng. exp. sta, 44-.

BARNARD, D(aniel) P(addock) 4th, *Chemistry.* Wilmington, Del, 6/98. B.S, Delaware, 19, Ch.E, 30; M. S, Mass. Inst. Tech, 21, Sc.D, 25. Standard Oil Co. Ind, assoc. dir. res, 25-. Automotive and aviation fuels and lubricants.

BARNARD, E(dward) R(eynolds), *Mechanical engineering.* Wilmington, Del, 7/22/01; m. 37. B.S, Delaware, 23; S.M, Mass. Inst. Tech, 24. Standard Oil Co. Ind, 24-, asst. dir. res, 42-48.

BARNARD, H(arry) E(verett), *Chemistry, Public health.* Dunbarton, N. H, 11/14/74, died, 46. B.S, New Hampshire Col, 99, Sc.D, 28. State food and drug commr, Ind, 07-19.

BARNARD, W(illiam) H(erschel), *Psychology.* Arab, Ala, 6/26/92. B.S, Alabama, 22; A.M, Columbia, 26; Ed.D, Indiana, 35. Taylor, head dept, 35-.

BARNES, A(rlie) R(ay), *Internal medicine.* Paris Crossing, Ind, 4/24/92. A.B, Indiana, 15, A.M, 16, M.D, 19; M.S, Minnesota, 29. Minnesota, prof, 36-; Mayo Clinic, head heart sect, 37-, chm. bd. gov, 47-.

BARNES, C(harles) R(eid), *Plant physiology* (starred). Madison, Ind, 9/7/58, died, 10. A.B, Hanover Col, 77, Ph.D, 86. Purdue, prof, 80-86; Chicago, prof, 98-10. Bot. Soc. Am. (pres, 03).

BARNES, D(avid) K(ennedy), *Organic chemistry.* Concordia, Kans, 4/23/23; m. 41, c. 2. B.S, Olivet Col, 43; M.A, Indiana, 44, Ph.D, 47. Antimalarials.

BARNES, G(arnett) F(reeman), *Physics.* Graves Co, Ky, 10/8/87; m. 18, c. 1. A.B, M.A, Indiana, 20, Ph.D, 31.

BARNETT, H(orace) L(eslie), *Mycology, Plant pathology.* Indianapolis, Ind, 2/19/09; m. 38, c. 3. A.B, DePauw, 31; M.S, N. Dak. Agr. Col, 33; Ph.D, Mich. State Col, 37.

BARNETT, M(artin) K(nox), *Physical chemistry.* Indianapolis, Ind, 12/29/09; m. 39, c. 2. A.B, Butler, 30; M.A, Cincinnati, 33.

BARNEY, Arthur L(ivingston), *Organic chemistry.* Homer, Minn, 4/4/18; m. 42, c. 2. B.S, Middlebury Col, 38; M.S, Syracuse, 40; Ph.D, Purdue, 43.

BARNHART, W(illia)m S(iddall), *Organic chemistry.* Dayton, O, 4/14/18; m. 42, c. 2. A.B, Allegheny Col, 40; M.S, Cornell, 42; Ph.D, Purdue, 48. Fluorination.

BARNHILL, J(ohn) F(irmen), *Mathematics.* Bloomington, Ind, 2/17/76, died, 41. A.B, Kansas, 10; A.M, Columbia, 22. Mich. State Nor. Col, prof, 22-41.

BARR, C(larence) F(oster), *Mathematics.* Ind, 3/12/93. M.S, Chicago, 23. Ind. high schs, 12-23; Purdue, instr, 23-26; Wyoming, 26-, prof, 40-.

BARR, F(rank) T(homas), *Chemical engineering.* Elwood, Ind, 7/1/10; m. 36, c. 3. B.S, Washington (St. Louis), 29, M.S, 31; Ph.D, Illinois, 34. Standard Oil Develop. Co, 36-.

BARR, J(ohn) H(enry), *Machine design.* Terre Haute, Ind, 6/19/61, died, 37. B.M.E, Minnesota, 83, M.S, 88; M.M.E, Cornell, 89. Cornell, prof, 91-03.

BARRE, H(enry) J(ohn), *Agricultural engineering.* Tampa, Kans, 4/11/05; m. 35, c. 3. B.S, Kans. State Col, 30; M.S, Iowa State Col, 33, Ph.D, 38. Purdue, head dept, 43-.

BARRETT, H(arold) J(ames), *Chemistry.* Frankton, Ind, 9/10/98; m. 40. A.B, West Virginia, 19, M.S, 20; Ph.D, Ohio State, 27. Dupont Co, 26-35; Roessler & Hasslacher Co, 35-.

BARRETT, J(oseph) J(ohn), *Chemistry.* Chelsea, Mass, 9/25/08; m. 31, c. 1. Magnavox Co. (Ft. Wayne), 27-, prod. control chem, 38-. Metal finishing.

BARRETT, W(illard) R(iehlman), *Chemistry.* Tully, N. Y, 12/18/99; m. 27, c. 1. Ch.B, Cornell, 20, Ph.D, 23. Dupont Co, 23-42; Hoosier Cardinal Corp. (Evansville), 46-.

BARRICK, E(lliott) R(oy), *Animal husbandry.* Worthington, Minn, 2/7/15; m. 45, c. 1. B.S, Okla. A. & M. Col, 38; Mass. State Col, 38-39; M.S, Purdue, 41, Ph.D, 47. Purdue, asst. prof, 39-47.

BARRUS, M(ortier) F(ranklin), *Plant pathology.* Forestville, N. Y, 3/17/79. A.B, Wabash Col, 08; Ph.D, Cornell, 11. Cornell, prof, 14-.

BARRY, M(aurice) J(oseph), *Medicine.* Indianapolis, Ind, 12/31/80. M.D, Indiana, 08. Indiana, clin. prof, 20-.

BARSS, W(alter) M(alcomson), *Physics.* Corvallis, Ore, 1/29/17; m. 47. B.A, British Columbia, 37, M.A, 39; Ph.D, Purdue, 42. Natl. Res. Council Canada, 42-.

BARTEL, F(rank) O(ctave), *Agricultural engineering.* Blue Earth, Minn, 7/15/93; m. 23, c. 2. C.E, Notre Dame, 15. U. S. Dept. Agr, 18-.

BARTHAUER, G(erald) L(ee), *Analytical chemistry.* Degraff, O, 10/4/17; m. 43, c. 1. A.B, Hiram Col, 39; M.S, Purdue, 41, Ph.D, 43. Gen. Elec, 46-.

BARTHOLOMEW, William C., *Botany.* Stockwell, Ind, 4/29/80, died, 34; m, c. 1. Ph.G, Purdue, 01. Eli Lilly & Co, 01-34, head bot. dept, 27-34.

BARTLE, Glenn G(ardner), *Geology.* Borden, Ind, 2/7/99; m. 21, c. 2. A.B, Indiana, 21, A.M, 23, Ph.D, 32. Kansas City, prof, 33-42; Syracuse, Triple Cities Col, dean, 46-50; State U. of N. Y. Harpur Col, provost, 50-.

BARTLETT, G(eorge) M(iller), *Mechanical engineering.* Chicago, Ill, 8/5/73, died, 36. B.S, Amherst Col, 01, A.M, 04. Diamond Chain & Mfg. Co. (Indianapolis), 10-36.

BARTON, B(ernard) C(harles), *Physical chemistry.* Crawfordsville, Ind, 1/14/12; m. 39, c. 2. A.B, Wabash Col, 34; Ph.D, Brown, 39. U. S. Rubber Co, 39-.

BARTON, T(homas) F(rank), *Geography.* Cornell, Ill, 12/3/05; m. 31, c. 1. Ed.B, Ill. State Nor, 30; Ph.M, Wisconsin, 31; Ph.D, Nebraska, 35. Ill. State Nor, assoc. prof, 35-47; Indiana, assoc. prof, 47-. Conservation; city planning.

BASS, S(hailer) L(inwood), *Organic chemistry.* Paducah, Ky, 4/5/06; m. 31, c. 7. A.B, Butler, 26; Ph.D, Yale, 29. Dow Chem. Co, 29-44.

BATCHELDER, H(oward) R(ussell), *Chemical engineering.* Swampscott, Mass, 9/5/06; m. 30, c. 2. S.B, Mass. Inst. Tech, 28, S.M, 30. Standard Oil Co. Ind, 30-37.

BATEMAN, R(ichard) L(ouis), *Chemistry.* Boonville, Ind, 10/29/02; m. 31, c. 1. A.B, Evansville Col, 25; M.A, Indiana, 28; Ph.D, Mich. State Col, 44. Ind. high schs, 25-27; Mich State Col, 29-.

BATES, A(rthur) C(rocker), *Mechanical engineering.* Montclair, N. J, 1/5/05; m. 34, c. 2. B.S, Purdue, 29; M.S, Michigan, 33; Ph.D, Pennsylvania, 41. Purdue, 29-31; Pennsylvania, 31-41; Lehigh, 48-.

BATES, C(harles) Carpenter, *Oceanography.* Harrison, Ill, 11/4/18; m. 42, c. 2. A.B, DePauw, 39; A.M, California L. A, 44. U. S. Hydrog. Off, 46-.

BATES, R(obert) E(llery), *Geomorphology.* Providence, R. I, 8/21/11; m. 47. A.B, Indiana, 32, A.M, 32; Ph.D, Columbia, 39. Indiana, asst. prof, 39-47. Erosion cycles; Indiana karst topography.

BATES, W(illiam) H(unt), *Mathematics.* Winchester, Tenn, 1/4/70. A.B, Vanderbilt, 94; A.M, Chicago, 02, Ph.D, 10. Purdue, 03-, assoc. prof, 11-.

BAUER, C(harles) A(ugust), *Mechanical engineering.* Springfield, O, 1/10/03; m. B.Sc, Wisconsin, 24. Hoosier Cardinal Corp. (Newburgh, Ind.), v.p, 35-.

BAUER, C(harles) W., *Biochemistry.* Hastings, Nebr, 6/6/99; m. 31, c. 1. Ph.G, Ph.C, Valparaiso, 21; B.S, Creighton, 27, A.M, 29; Chicago, 30; Ph.D, Iowa, 37. Creighton, 24-37; Mass. Col. Phar, 37-46.

BAUER, C(lyde) M(ax), *Geology.* Bristol, Ind, 4/5/86; m. 11, c. 3. B.S, Chicago, 08; Ph.D, Colorado, 32. Natl. Park Serv, 32-, head Yellowstone, 32-46, geol, 46-.

BAUGH, R(uth) E(mily), *Geography.* Bedford, Ind, 1/10/89. A.B, California L. A, 21; A.M, Clarke, 26, Ph.D, 29. California L. A, 19-, assoc. prof, 45-.

BAUM, A(rthur) A(loysius), *Chemistry.* Escanaba, Mich, 7/10/14. B.S, Notre Dame, 36, M.S, 37, Ph.D, 39. Dupont Co, 39-.

BAUMGARTNER, F(rederick) M(ilton), *Wildlife conservation.* Indianapolis, Ind, 6/5/10; m. 36, c. 4. A.B, Butler, 31; A.M, Kansas, 33; Ph.D, Cornell, 37. Okla. A. & M. Col, assoc. prof, 39-.

BAUSMAN, R(obert) O(tis), *Agricultural economics.* Dayton, Ind, 7/3/91; m. 20, c. 1. B.S, Purdue, 14; Ph.D, Cornell, 30. Purdue, 14-17; Delaware, 18-.

BAXMAN, H(orace) R(oy), *Chemistry.* Lansing, Ill, 1/27/21; m. 44, c. 1. B.S, Indiana, 43; Ph.D, Cornell, 47. Argonne Natl. Lab, 48-.

BAXTER, A. L(awrence), *Analytical chemistry.* Terre Haute, Ind, 1/21/07; m. 30. B.S, Ind. State Teachers Col, 29. High sch, 29-35; Commercial Solvents Corp. (Terre Haute), 35-.

BAYS, C(arl) A(ndrew), *Geology.* Rockport, Ind, 6/20/14; m. 38, c. 2. B.A, Wisconsin, 34, Ph.D, 37. Cons. geol. (Ind.), 39-42; Evansville Col, 41-42.

BEABER, N(athaniel) J(ohn), *Organic chemistry.* Ft. Wayne, Ind, 9/13/97; m. 25, c. 2. B.S, Kalamazoo Col, 20; M.S, Chicago, 21; Ph.D, Iowa State Col, 25. Mellon Inst, 26-.

BEACH, F(rank) H(ainer), *Horticulture.* Geneva, N. Y, 7/6/93, died, 47. B.S, Iowa State Col, 15. Purdue, 15-17; Ohio State, 25-.

BEACH, L(eland) K(enneth), *Chemistry.* Holland, Mich, 3/13/13; m. 39, c. 3. A.B, Hope Col, 35; M.S, Washington (St. Louis), 37; Ph.D, Purdue, 40. Standard Oil Develop. Co, 39-.

BEADLE, B(uell) W(esley), *Chemistry.* Port Barre, La, 9/9/11; m. 34, c. 2. B.S, Kans. State Col, 35, M.S, 38; Ph.D, Purdue, 42. Am. Meat Inst, 42-48.

BEAL, June Lutz, *Mathematics.* Indianapolis, Ind, 6/19/95; m. 37. A.B, Butler, 17; A.M, Chicago, 23. Butler, 18-, asst. prof, 23-, act. head dept, 33-47.

BEALS, E(rnest) L(eslie), *Pharmaceutical chemistry.* Porterville, Calif, 6/6/03; m. 35, c. 1. B.S, Ore. State Col, 28, M.S, 32; Ph.D, Purdue, 40. Wellcome & Co, 42-.

BEAN, (Benjamin) Leonard, *Chemistry.* Canton, China, 3/30/06; m. 43, c. 2. B.A, Ind. Cent. Col, 28; Chicago, 36-41. U. S. Bur. Standards, 41-.

BEAN, F(rederic) R(oland), *Chemistry.* Elnora, Ind, 12/1/04; m. 39, c. 4. A.B, DePauw, 27; Ph.D, Cornell, 31. Eastman Kodak, 31-.

BEARD, C(harles) N(oble), *Physiography.* Oaktown, Ind, 12/27/06; m. 33, c. 1. A.B, Indiana, 35, A.M, 36; Ph.D, Illinois, 41. Fresno State Col, 37-.

BEARD, G(eorge) Victor, *Physical chemistry.* Coalville, Ut, 8/10/08; m. 34, c. 5. A.B, Utah, 28, A.M, 33; Ph.D, Purdue, 41. Utah, 40-.

BEATTY, (Isaac) C(room) III, *Organic chemistry.* Birmingham, Ala, 6/9/14; m. 36, c. 3. B.S, Univ. of South, 35; A.M, Oberlin Col, 37; Ph.D, Yale, 40. Purdue, asst. prof, 46-.

BEATY, E(dward) B(enjamin), *Mathematics.* Walkerton, Ind, 12/5/76. B.S, Ore. State Col, 03; A.M, California, 16-29. Ore. State Col, 08-.

BEAVER, P(aul) C(hester), *Parasitology.* Glenwood, Ind, 3/10/05; m. 31, c. 1. A.B, Wabash Col, 28; M.S, Illinois, 29, Ph.D, 35. Tulane, 45-.

BECHTEL, A(lbert) R(eiff), *Botany.* Royersford, Pa, 3/21/82; m. 13, c. 3. B.S, A.M, Pennsylvania, 12; Ph.D, Cornell, 20. Wabash Col, head dept, 20-. Ind. Acad. Sci. (v.p, 47). Taxonomy of seed plants; morphology of fungi.

BECHTOL, L(avon) D(ee), *Chemistry.* Wabash, Ind, 2/3/18; m. 38, c. 2. A.B, Manchester Col, 40; Ph.D, Purdue, 44; M.D, Hopkins, 47. Methodist Hosp. (Indianapolis), 47-.

BECHTOLD, M(ax) F(rederick), *Physical chemistry.* North Manchester, Ind, 1/3/15; m. 37, c. 4. B.S, Manchester Col, 35; Ph.D, Purdue, 39. Dupont Co, 39-.

BECK, C(arl) W(ellington), *Minerology.* Batesville, Ind, 5/19/16; m. 41, c. 1. A.B, DePauw, 38; M.A, Harvard, 44, Ph.D, 46. New Mexico, 46-.

BECK, L(ester) E(lmer), *Electrical engineering.* Brackenridge, Pa, 5/29/06; m. 32, c. 2. B.S, Pa. State Col, 26; M.S, Purdue, 32. Purdue, prof, 28-. Pressure and temperature control.

BECK, L(loyd) W(illard), *Chemistry.* Batesville, Ind, 8/10/19; m. 45. A.B, DePauw, 41; Ph.D, Wisconsin, 44. Procter & Gamble, 44-.

BECK, L(yle) V(ibert), *Psychology.* Lebanon, Ind, 4/19/06; m. 40. A.B, Wabash Col, 28; M.S, Washington (St. Louis), 30; Ph.D, Pittsburgh, 33. Natl. Cancer Inst, 47-.

BECK, P(aul) A(dams), *Metallurgy.* Budapest, Hungary, 2/5/08. M.E, Budapest, 31; M.S, Mich. Col. Mining, 29. Notre Dame, assoc. prof, 45-. Alloys.

BECKBERGER, L(avern) H(erbert), *Chemical engineering.* Steuben Co, Ind, 11/24/19; m. 44, c. 2. B.Ch.E, Ohio State, 41; M.S, Wisconsin, 43, Ph.D, 46. Sinclair Res. & Develop. Co, 46-.

BECKER, A(lbert) J(ohn), *Applied mechanics.* Evansville, Ind, 10/6/77. B.S, Michigan, 03, M.E, 07; Ph.D, Illinois, 15. Ohio Valley Hardware & Roofing Co. (Evansville), 20-.

BECKETT, C(harles) H(arrison), *Mathematics.* Aurora, Ind, 5/24/76. A.B, Cornell, 00; 00-02. Purdue, assoc. prof, 05-12; State Life Ins. Co. (Indianapolis), 12-.

BECKNELL, G(uy) G(aillaird), *Physics.* Milford, Ind, 4/16/78; m. 13, c. 1. B.S, Northwestern, 04, M.S, 05, Ph.D, 11. Purdue, instr, 05-08.

BEEBE, S(ilas) P(almer), *Physiological chemistry.* St. Johns, Mich, 4/22/76. B.S, Valparaiso, 96; B.S, Harvard, 00; M.S, Yale, 02, Ph.D, 04; M.D, Cornell, 09. Cornell, prof, 09-.

BEEDE, J(oshua) W(illiam), *Geology, Paleontology.* Raymond, N. H, 9/14/71, died, 40. B.S, Washburn Munic, 96, A.M, 97; Ph.D, Kansas, 99. Indiana, 01-17, assoc. prof, 09-17, visiting prof, 28-30.

BEELER, R(aymond) C(ole), *Radiology.* Charlestown, Ind, 1/2/88; m. 16, c. 1. A.B, Indiana, 10, M.D, 12. Indiana, sch. med, prof, 14-.

BEESON, W(illiam) M(alcolm), *Animal nutrition.* Meridian, Miss, 2/3/11; m. 34, c. 2. B.S, Okla. A. & M. Col, 31; M.S, Wisconsin, 32, Ph.D, 35. Purdue, assoc. prof, 45-.

BEGEMAN, L(ouis), *Physics.* Evansville, Ind, 3/1/65; m. 15, c. 2. B.S, Michigan, 89, M.S, 97; Ph.D, Chicago, 10. Ia. State Teachers Col, 99-35.

BEGHTEL, F(loyd) E(ldon), *Botany.* Huntington, Ind, 12/22/86; m. 11, c. 4. A.B, Ind. Cent. Col, 12; A.M, Indiana, 17; Ph.D, Cincinnati, 24. Ind. Cent, prof, 25-31; Evansville Col, prof, 31-43; Servel, Inc. (Evansville), 43-.

BEHRENS, C(harles) A(ugust), *Bacteriology.* Grand Rapids, Mich, 1/5/85, died, 50. B.S, Michigan, 09, M.S, 10, Ph.D, 13. Purdue, prof, 14-50. Ind. Acad. Sci. (pres, 23).

BEHRENS, O(tto) K(arl), *Biochemistry.* Evansville, Ind, 8/22/11; m. 35, c. 2. A.B, DePauw, 32. Eli Lilly & Co, 40-, head bio-org. chem. res. dept, 47-. Peptides, proteins; penicillins.

BEIER, Delton Clifford, *Clinical psychology.* Chippewa Falls, Wis, 10/13/15. B.A, Wisconsin, 38, M.A, 39; Ph.D, Louisiana, 43. Purdue, instr, 43-44; Indiana, 45-, assoc. prof, 47-.

BEIER, Kurt Alfred, *Mechanical engineering.* Magdeburg, Germany, 7/12/04, nat, 32; m. 28, c. 2. M.S, Technikjm Hildburg Hausen Sen, 24. Schwitzer-Cummins Co. (Indianapolis), 28-, ch. eng, 40-.

BELCHER, D(onald) J(enks), *Civil engineering.* Chicago, Ill, 2/11/11; m. 36, c. 1. B.S, Purdue, 34, M.S.E, 40, C.E, 42. Purdue, 37-46, asst. prof, 45-46; Cornell, 46-.

BELINFANTE, F(rederick) J., *Physics.* Hague, Holland, 1/6/13; m. 37, c. 3. B.A, Leyden, 33, M.A, 36, Ph.D, 39. Purdue, assoc. prof, 48-.

BELL, A(udra) Earl, *Genetics.* Providence, Ky, 5/9/18; m. 41, c. 3. B.S, Kentucky, 39; M.S, Louisiana, 41; Ph.D, Iowa State Col, 49. Purdue, asst. prof, 49-.

BELL, Ernest P(ercy), *Organic chemistry.* St. Louis, Mo, 10/12/18; m. 45. B.S, St. Louis, 39, M.S, 41; Ph.D, Notre Dame, 43. Sharples Chem. Co, 46-.

BELL, P(ersa) R(aymond), *Nuclear physics.* Ft. Wayne, Ind, 4/24/13; m. 41, c. 1. B.Sc, Howard Col, 36; Chicago, 38-41. Oak Ridge Natl. Lab, prin. phys, 46-. Cyclotron pile.

BELL, Sanford, *Psychology, Pedagogy.* Borden, Ind, 4/16/70. A.B, Indiana, 99, A.M, 00. North. Ind. Nor. Sch, prof, 96-98; Indiana, assoc. prof, 98-00.

BELL, William Howard, *Chemistry, Bacteriology.* Newport, Ind, 9/2/97; m. 23, c. 1. A.B, Ind. State Teachers Col, 17; A.M, Indiana, 18. Coleman & Bell Co, 20-.

BENDER, Paul, *Physics.* Springs, Pa, 6/26/99; m, c. 3. A.B, Hesston Col, 21; M.S, Iowa, 25, Ph.D, 31. Goshen Col, prof, 32-.

BENEDICT, W(illiam) L(emuel), *Ophthalmology.* Springport, Ind, 2/13/85; m. 14, c. 3. M.D, Michigan, 12. Minnesota, prof, 17-.

BENICA, William S(teinhart), *Pharmacy.* Logansport, Ind, 9/9/21; m. 44, c. 3. B.Sc, Rutgers, 42; M.Sc, Minnesota, 43, Ph.D, 48.

BENKESER, Robert Anthony, *Chemistry.* Cincinnati, O, 2/16/20; m. 46. B.S, Xavier (O.), 42; M.S, Detroit, 44; Ph.D, Iowa State Col, 47. Purdue, asst. prof, 46-.

BENNETT, George E(dward), *Organic chemistry.* Morgantown, W.Va, 11/3/20; m. 43, c. 1. A.B, DePauw, 42; Ph.D, Purdue, 47. Monsanto Chem. Co, 46-.

BENNETT, Ralph E(dgar), *Botany, Mycology.* Grant, Mich, 2/17/09; m. 33, c. 1. A.B, Michigan, 33, A.M, 34, Ph.D, 40. Jos. E. Seagram & Sons (Ind.), 42-43; Commercial Solvents Corp. (Terre Haute), 43-.

BENNETT, Robert B(roadhurst), *Industrial organic chemistry.* Charlotte, N. C, 6/9/09; m. 35, c. 3. B.S, Florida, 31, Ph.D, 36. Purdue, 31-36; Reilly Tar & Chem. Co. (Ind.), 36-40; Firestone Tire Co, 40-.

BENNETT, Theodore C(laire), *Aeronautical engineering.* Toledo, O, 2/2/06; m. 35, c. 4. B.S, Purdue, 28; M.S, Pennsylvania, 33. Naval Aircraft Lab, 29-.

BENNETT, Wendell C(lark), *Archeology, Ethnology.* Marion, Ind, 8/17/05; m. 35, c. 2. Ph.B, Chicago, 27, A.M, 29, Ph.D, 30. Yale, 40-, prof, 45-. Archeology and ethnology of South America.

BENNIGHOF, C(loyd) L(awrence), *Biology.* Ashland, O, 9/19/87; m. 16, c. 2. B.S, Hiram Col, 11; M.S, Chicago, 22. Franklin Col, prof, 19-21; West. Md. Col, 27-.

BENNINGHOFF, William S(hiffer), *Botany.* Ft. Wayne, Ind, 3/23/18; m. 41. S.B, Harvard, 40, M.A, 42, Ph.D, 48. U. S. Geol. Surv, 48-. Paleobotany.

BENSON, Simon, *Physiology.* Ed, Vermland, Sweden, 10/24/90; m. 24, 46, c. 3. Ph.C, Valparaiso, 19, A.B, 20; B.S, Chicago, 25, M.S, 29, Ph.D, 31. Vincennes, prof. chem, 24-25; Chicago, 25-37.

BENTE, Paul F(rederick), Jr, *Chemistry.* Baltimore, Md, 4/26/17; m. 42, c. 2. B.A, Indiana, 39; Ph.D, Wisconsin, 42. Dupont Co. (Ind.), 42-.

BENTON, Curtis, *Entomology.* Manson, Ia, 8/18/98; m. 42. A.B, Illinois, 20, M.S, 24. U. S. Dept. Agr, Bur. Entom. & Plant Quarantine (W. Lafayette, Ind.), 24-. Hessian fly; chinch bug.

BENTON, F(rancis) L(ee), *Organic chemistry.* Moxahala, O, 2/12/12; m. 40, c. 3. B.Ch.E, Ohio State, 35, M.S, 36, Ph.D, 40. Notre Dame, 40-, assoc. prof, 46-.

BENZ, Stanley C(arroll), *Psychology.* Charles City, Ia, 7/23/14; m. 42, c. 2. B.A, Iowa State Teachers Col, 37; M.A, Northwestern, 41; Ph.D, Purdue, 48. Purdue, dir. counseling, 47-.

BENZER, Seymour, *Physics.* N. Y. C, 10/15/21; m. 42, c. 1. B.A, Brooklyn Col, 42; M.S, Purdue, 43, Ph.D, 47. Purdue, 45-, asst. prof, 47-.

BERG, William D(arragh), *Mathematics.* Gary, Ind, 10/24/16; m. 42, c. 2. A.B, Hanover Col, 38; M.S, Iowa, 40, Ph.D, 41. Kenyon Col, 46-.

BERGDOLL, Merlin S(cott), *Agricultural chemistry.* Petersburg, W. Va, 9/23/16; m. 42, c. 2. B.S, West Virginia, 40; Ph.D, Purdue, 46. Chicago, instr, 46-.

BERGENSTAL, D(elbert) M(auritz), *Clinical medicine.* Kansas City, Mo, 12/23/17; m. 48. B.S, Arkansas, 40; M.S, Purdue, 41, Ph.D, 43; M.D, Chicago, 47.

BERGSTROM, F(rancis) W(illiam), *Chemistry.* Bloomington, Ind, 1/10/97, died, 45. A.B, Stanford, 18, Ch.E, 19, Ph.D, 22. Stanford, prof, 25-45.

BERGSTROM, John A(ndrew), *Psychology.* Bledsberg, Sweden, 10/26/67, died, 10. A.B, Wesleyan, 90; Ph.D, Clark, 94. Indiana, asst. prof. to prof, 94-10.

BERK, Bernard, *Chemistry.* Brooklyn, N. Y, 12/23/15; m. 40. B.A, Indiana, 37, M.A, 38, Ph.D, 41; M.Ch.E, N. Y. U, 47. E. R. Squibb & Sons, 46-.

BERKEY, Charles P(eter), *Geology* (starred). Goshen, Ind, 3/25/67; m. 94, c. 2. B.S, Minnesota, 92, M.S, 93, Ph.D, Sc.D, 40. Natl. Acad. Sci, Geol. Soc. (sec, 22-40, pres, 41). Geology for dams, tunnels.

BERMAN, J(acob) K(ohn), *Surgery.* Evansville, Ind, 10/24/96; m. 23, c. 3. A.B, Indiana, 19; M.D, Jefferson Med. Col, 21. Indiana, 23-, assoc. prof, 40-; St. Vincent's Hosp, ch. surg, 46-.

BERNARD, Sister Marie (Witte), *Biology.* Richmond, Ind, 9/19/14. B.S, Marian Col, 41, M.S, Fordham, 45, Ph.D, 47. Marian, instr, 47-. Chenopodiaceae.

BERNSTEN, Robert A(ndyv), *Organic chemistry.* Northfield, Minn, 2/22/17; m. 43, c. 2. B.A, St. Olaf Col, 39; M.S, N. Y. U, 41; Ph.D, Purdue, 49. Augustana Col, 48-.

BERRY, Charles Miles, *Physiology, Anatomy.* Dixon, Ill, 8/25/17; m. 45, c. 1. A.B, DePauw, 38; M.S, Northwestern, 39, Ph.D, 41. Cornell, 41-, asst. prof, 47-.

BERRY, E(dna) Janet, *Chemistry.* Wheatland, Ind, 5/28/17. B.S, Ph.D, Purdue, 46. Standard Oil Develop. Co, 48-.

BERRY, Eugene M(anasseh), *Mathematics.* West Sumner, Me, 2/19/91; m. 23, c. 2. A.B, Colgate, 15; M.S, Iowa, 17, Ph.D, 20. Purdue, instr, 20-26; Neb. State Teachers Col, 38-.

BERRY, H(erman) C(laude), *Engineering.* Near Zionsville, Ind, 12/18/73; m. 02, c. 2. A.B, Indiana, 97; B.S, Purdue, 02. Pennsylvania, prof, 05-44.

BERRY, Jack M(inton), *Metallurgy.* Detroit, Mich, 10/11/17; m. 46. B.S, Purdue, 39. Batelle Mem. Inst, 41-.

BERRY, John W(illiam), *Chemistry.* Indianapolis, Ind, 1/21/16; m. 43, c. 1. A.B, Indiana, 37; M.S, Iowa, 41, Ph.D, 42. Am. Cyanamid Co, 42-.

BERRY, N(orton) E(llsworth), *Chemistry.* Hartman, Wash, 12/2/02; m. 33, c. 2. B.S, California, 26, Ph.D, 31. Servel, Inc. (Evansville), dir. res, 43-.

BERRY, Richard N(ash), *Psychology.* Poolville, N. Y, 12/3/18; m. 47. B.A, Colgate, 40; M.Sc, Brown, 41, Ph.D, 47. Indiana, asst. prof, 47-.

BERTETTI, J(ohn) W(illiam), *Chemical engineering.* Spring Valley, Ill, 2/20/05; m. 37, c. 1. B.S, Illinois, 31; M.S, Michigan, 32, Ph.D, 34. Standard Oil Co. Ind, 34-36; Root Petrol. Co, 42-.

BERTRAMSON, B(ertram) R(odney), *Soils.* Potter, Nebr, 1/25/14; m. 38. B.S, Nebraska, 37, M.S, 38; Ph.D, Oregon State Col, 41. Purdue, 46-.

BETZ, Howard Theodore, *Physics.* Warsaw, Ind, 7/11/09; m. 36, c. 2. A.B, Valparaiso, 33. Valparaiso, instr, 34-39; Armour Res. Found, 39-. High speed and color photography.

BEVAN, William A(lfred), *Aeronautics.* Skewen, S. Wales, 12/11/76, died, 43. B.S, Iowa State Col, 04; M.S, Mass. Inst. Tech, 21. Purdue, 26-29, 41, assoc. prof, 27-29.

BEYNON, L(isabeth) H(ephzibah), *Chemistry.* Platte Co, Nebr. A.B, Nebraska, 18; M.S, Chicago, 23; Sc.D, Hopkins, 32. St. Mary-of-the-Woods Col, head dept, 22-25.

BIBBINS, Francis E(ugene), *Pharmacy.* Beloit, Wis, 9/28/83; m, c. 2. Ph.G, Purdue, 04, hon. Sc.D, 42. Eli Lilly & Co, 03-, ch. phar, 13-.

BIDDLE, William W(ishart), *Social psychology.* Chicago, Ill, 6/19/00; m. B.A, Pomona Col, 23; B.A, Columbia, 28, Ph.D, 32. Earlham Col, 47-.

BIEBER, C(harles) L(eonard), *Geology.* Reinbeck, Ia, 8/22/01; m. 29, c. 3. A.B, Cornell Col, 24; A.M, Iowa, 32; Ph.D, Northwestern, 42. DePauw, prof, 47-.

BIEFELD, L(awrence) P(aul), *Chemistry.* Akron, O, 8/30/09; m. 36, c. 3. A.B, Denison, 30; Ph.D, Ohio State, 34. Purdue, 37-42, asst. prof, 40-42; Owens-Corning Corp, 42-.

BIGGINS, Edward Richard, *Engineering.* Ft. Wayne, Ind, 12/31/13; m. 41, c. 2. B.S, Notre Dame, 35; M.S.E, Michigan, 37. Linde Air Prods. Co. (Indianapolis), 32-. Acetylene.

BIGNEY, A(ndrew) J(ohnson), *Biology.* Moores Hill, Ind, 2/15/64, died, 29. A.B, Moores Hill Col, 88, A.M, 91. Moores Hill, prof, 88-29 (Evansville Col, 19-29). Ind. Acad. Sci. (pres, 15).

BIJOU, Sidney W(illiam), *Psychology.* Baltimore, Md, 11/12/08; m. 34, c. 2. B.S, Florida, 33; A.M, Columbia, 36; Ph.D, Iowa, 41. Indiana, 46-, assoc. prof, 48-.

BILLHARTZ, W(illiam) H(enry), *Physical optics.* Pittsburgh, Pa, 8/30/08; m. 39, c. 1. B.S, Pittsburgh, 30, M.S, 34, Ed.M, 36, Ph.D, 38. Franklin Col, head dept. 42-46.

BILLINGS, J(ohn) S(haw), *Medicine* (starred), *Bacteriology.* Switzerland Co, Ind, 4/12/38, died, 13. A.B, Miami, 57, A.M, 60; M.D, Cincinnati, 60; LL.D, Edinburgh 84, Harvard 86, Yale 01, Hopkins 02; D.C.L., Oxford, 89. Natl. Acad. Sci. Fungi; bacteriology; vital statistics; medical education.

BILLINGS, W(illiam) D(wight), *Botany.* Washington, D. C, 12/29/10; m. 36. A.B, Butler, 33; A.M, Duke, 35, Ph.D, 36. Nevada, 38-.

BILLMAN, J(ohn) H(enry), *Organic chemistry.* Brooklyn, N. Y, 2/8/12. B.S, Virginia, 34; A.M, Princeton, 35, Ph.D, 37. Indiana, assoc. prof, 39-.

BILLS, Charles E(verett), *Biochemistry.* Natick, Mass, 2/9/00; m. 31, c. 2. B.S, Hopkins, 20, A.M, 23, Ph.D, 24. Mead Johnson & Co. (Evansville), 25-.

BINDER, Raymond Charles, *Mechanical engineering.* Chicago, Ill, 7/25/07; m. 37, c. 1. B.S, Mass. Inst. Tech, 30; M.S, Calif. Inst. Tech, 33, Ph.D, 36. Purdue, 36-, prof, 42-.

BINFORD, Raymond, *Zoology.* Carthage, Ind, 7/15/76; m. 13, c. 4. B.S, Earlham Col, 01; S.M, Chicago, 06; Ph.D, Hopkins, 12. Earlham, prof, 14-18; Guilford Col, pres, 18-34.

BINKLEY, Wendell W(ilfred), *Organic chemistry.* Lima, O, 5/24/13; m. 36, c. 3. B.A, Ohio Northern, 35; M.S, Purdue, 36, Ph.D, 39. Ohio State, 42-.

BIRDSALL, Joseph B(enjamin), *Physical anthropology.* South Bend, Ind, 3/20/08; m. 44. B.S, Mass. Inst. Tech, 31; Ph.D, Harvard, 41. California L. A, 47-.

BIRKENHAUER, R(obert) J(oseph), *Chemistry.* Toledo, O, 2/7/16; m. 41. B.S, Detroit, 37; M.S, Notre Dame, 39, Ph.D, 41. Dupont Co, 41-.

BISHOP, (Ethel) Ruth, *Psychology.* Tipton, Ind, 6/13/09. A.B, Northwestern, 29; S.M, Chicago, 36, Ph.D, 39. Western Elec, 29-37.

BISHOP, John W(illiam), *Chemistry.* Jefferson Co, Ind, 6/12/16; m. 39, c. 2. B.A, DePauw, 38; M.A, West. Reserve, 39, Ph.D, 42. Tidewater Assocd. Oil Co, 42-.

BITTENBENDER, W(illiam) A(lbert), *Organic chemistry.* Ames, Ia, 9/7/14; m. 41, c. 1. A.B, Wittenberg Col, 36; M.S, Purdue, 38, Ph.D, 41. Merck & Co, 41-.

BITTING, A(rvill) W(ayne), *Chemistry.* Bourbon, Ind, 5/24/70, died, 46. B.S, Purdue, 91; D.V.S, Iowa Col, 95; M.D, Indiana, 00. Purdue and exp. sta, 93-07. Bacteriology; food technology.

BITTING, Katherine Golden, *Botany.* Ontario, Can, 4/29/69, died, 37. B.S, Purdue, 90, M.S, 92. Purdue, 90-04. Molds of food.

BITTLES, James A(rthur, Jr), *Organic chemistry.* Bedford, Ind, 9/29/21; m. 43. A.B, DePauw, 43; Ph.D, Purdue, 48. Dupont Co. Exp. Sta, 48-. Halogenation.

BIXBY, W(illiam) Herbert, *Electrical engineering.* Indianapolis, Ind, 12/28/06. B.S.E., Michigan, 30, M.S, 31, Ph.D, 33. Wayne, 36-.

BLACK, Glenn Albert, *Archeology.* Indianapolis, Ind, 8/18/00; m. 31. Ind. Hist. Soc, dir. archeol, 31-; Indiana, lect, 44-, dir. archeol, field sch, 45-. Indiana archeology; Angel Mounds (Vanderburgh County).

BLACK, H(oward) C(harles), *Organic chemistry.* Warsaw, Ind, 9/20/12; m. 38. A.B, DePauw, 34; A.M, Illinois, 36, Ph.D, 38. Swift & Co, 37-. Oil seed extraction.

BLACK, John D(avid), *Entomology, Zoology.* Winslow, Ark, 7/2/08. A.B, Kansas, 35; A.M, Indiana, 37; Ph.D, Michigan, 40. Anderson Col, prof, 40-41; Ala. Poly. Inst, 41-.

BLACK, Loren T., *Mathematics.* Peru, Ind, 9/26/98; m. 23, c. 3. A.B, Ashland Col, 23; A.M, Michigan, 28. Long Beach Col, 35-.

BLACKALL, Clair J(oseph), *Mathematics.* North Baltimore, O, 12/29/09. B.S, Notre Dame, 29, M.S, 30; Ph.D, Cornell, 39. Toledo, assoc. prof, 48-.

BLAIN, Walter L(eroy), *Plant pathology.* Columbia City, Ind, 7/6/92, died, 49. A.B, Wabash Col, 16; A.M, Illinois, 21, Ph.D, 26. Southeast. State Col. (Okla.), 27-49.

BLAIR, Albert P(atrick), *Zoology.* Dayton, Tex, 11/3/13; m. 36. B.S, Tulsa, 36; Ph.D, Indiana, 40. Natl. res. fellow, 40-41; Tulsa, 47-, assoc. prof, 48-. Sex behavior of toads.

BLAKE, E(dwin) M(ortimer), *Mathematics* (starred). N. Y. C, 6/16/68; m. 00, 43, c. 2. E.M, Columbia, 90, Ph.D, 93. Purdue, instr, 96-98; Calif, 00-04; Ariz, prof, 04-10.

BLAKE, Lucien Ira, *Electrical engineering.* Mansfield, Mass, 9/12/54, died, 16. A.B, Amherst Col, 77, A.M, 80; Ph.D, Berlin, 83. Rose Poly. Inst, prof, 84-87; Kansas, 87-06.

BLALOCK, Grover C(leveland), *Electrical engineering.* Wingo, Ky, 12/26/84; m. 12, c. 2. B.S, Michigan, 10; E.E, Purdue, 17. Purdue, 15-, prof, 25-.

BLANCHARD, R(alph) C(arpenter), *Geology.* Newport, Ind, 12/4/82. B.S, Rose Poly. Inst, 05; Ph.D, Columbia, 13.

BLANCHARD, W(illiam) M(artin), *Chemistry.* Perquimans Co, N. C, 8/25/74, died, 42. A.B, Randolph-Macon, 94, A.M, 97; Ph.D, Hopkins, 00. Rose Poly. Inst, instr, 00-01; DePauw, prof, 01-42. Ind. Acad. Sci. (pres, 26). Four students of his won stars.

BLATCHLEY, W(illis) S(tanley), *Entomology, Geology.* North Madison, Conn, 10/6/59, died, 40. A.B, Indiana, 87, A.M, 91, LL.D, 21. High sch, Terre Haute, 87-94; state geol, Ind, 94-11. Ind. Acad. Sci. (pres, 03). Author of 14 volumes and part-author of 15 more; caves in Indiana; orthoptera and coleoptera of Indiana.

BLAYDES, Glenn W(illiam), *Botany.* Roachdale, Ind, 9/30/00; m. 28, c. 1. A.B, Indiana, 24; A.M, Ohio State, 26, Ph.D, 31. Ohio State, 28-.

BLEULER, E(rnst), *Nuclear physics.* Kusnacht, Switzerland, 1/4/16; m. 45, c. 2. Dipl, Fed. Inst. Tech. (Zurich), 38, Dr. Sc. Nat, 42. Purdue, 47-, assoc. prof, 48-.

BLEW, Michael J(ames), *Sanitary engineering.* Wabash, Ind, 11/9/91; m. 17, c. 1. A.B, Indiana, 15, A.M, 16. Dept. Army (Wash, D. C.), ch. water and sewage sect, 47-.

BLICKENSTAFF, Robert T(heron), *Organic chemistry.* North Manchester, Ind, 7/3/21; m. 44, c. 1. A.B, Manchester Col, 44; M.S, Purdue, 46, Ph.D, 48. Procter & Gamble, 48-.

BLINKS, L(awrence) R(ogers), *Plant physiology.* Michigan City, Ind, 4/22/00; m. 28, c. 1. B.S, Harvard, 23, M.A, 25, Ph.D, 26. Stanford, 33-, prof, 36-.

BLITZSTEN, E(lizabeth) P. Wolf, *Medicine.* Indianapolis, Ind, 96. B.S, Chicago, 18, Ph.D, M.D, 22. Michael Reese Hosp, ch. heart sta.

BLOOM, William W(hiley), *Biology.* Crystal City, Mo, 10/7/10; m. 37, c. 2. A.B, Valparaiso, 39; M.S, Chicago, 49. Valparaiso, instr, 43-.

BLUME, Roe C(alvin), *Chemistry.* Ft. Wayne, Ind, 12/4/16; m. 40, c. 3. B.S, Purdue, 38; Ph.D, N. Y. U, 44. Dupont Co, res. chem, 44-.

BOATMAN, A(rchie) O(scar), *Physics.* Olney, Ill, 10/23/85; m. 19, c. 2. A.B, Indiana, 22, A.M, 27. Carthage Col, prof. math, 36-.

BOBALEK, Edward G(eorge), *Chemistry.* Chicago, Ill, 10/13/15; m. 42, c. 2. B.S, St. Mary's Col. (Minn.), 38; Ph.D, Indiana, 42. Arco Co, 45-.

BOBBS, John S(tough), *Surgery.* Greenvillage, Pa, 12/28/1809, died, 70. M.D, Jefferson Med. Col, 36. Dean, Ind. Cent. Med. Col, then under Asbury (DePauw), 49-52. Ind. Med. Soc. (pres, 68). Performed first operation for removal of gallstones.

BOCK, Charles D(ickens), *Physics.* Mishawaka, Ind, 1/11/08; m. 36. A.B, Kalamazoo Col, 29; Ph.D, Yale, 33. Arma Corp. (Brooklyn), 36-48.

BOCKSTAHLER, Lester I(rving), *Physics.* Santa Claus, Ind, 7/22/95; m. 28, c. 1. A.B, Indiana, 20, A.M, 21; Ph.D, Northwestern, 24. Northwestern, assoc. prof, 34-.

BOCSKEY, Stephen C(harles), *Biology.* Csorna, Hungary, 7/16/06, nat, 29; m. 41, c. 2. B.S, Notre Dame, 29, M.S, 30. Notre Dame, assoc. prof, 29-41; Aviation Corp. (Ind.), 41-45.

BODENBERG, E(mmett) T(heodore), *Plant physiology.* Napoleon, Ind, 7/14/00; m. 27, c. 2. B.S, Capital, 25; M.S, Ohio State, 26; Ph.D, Washington (Seattle), 28. U. S. Natl. Park Serv, 31-.

BODINE, D(onaldson), *Geology, Zoology.* Richboro, Pa, 12/13/66, died, 14; m. 14. Ph.B, Cornell, 87, Sc.D, 95. Wabash Col, prof, 95-05. Ind. Acad. Sci. (pres, 13).

BOHONOS, Nestor, *Bio-chemistry.* Winnipeg, Man, Can, 8/22/15, nat, 46; m. 41, c. 2. B.Sc, Alberta, 37; M.S, Wisconsin, 39, Ph.D, 43. Purdue, asst. prof, 46-. Antibiotics.

BOHREN, B(ernard) B(enjamin), *Poultry genetics.* Omaha, Nebr, 8/15/14; m. 38, c. 3. B.S, Illinois, 37; M.S, State Col. Wash, 40; Ph.D, Kans. State Col, 42. Purdue, assoc. prof, 43-.

BOLE, Simeon James, *Biology.* Mich, 3/25/75. A.B, Michigan, 07; A.M, Illinois, 12; Ph.D, Iowa State Col, 34. Taylor, prof, 43-.

BOLEN, Homer R(oscoe), *Zoology.* Shirley, Ind, 7/30/01; m. 24, c. 2. A.B, Indiana, 23, A.M, 25; Ph.D, Texas, 33. Southeast Mo. State Col, prof, 32-.

BOLGER, Henry J(oseph), *Physics.* Columbus, Wis, 9/29/01. A.B, Notre Dame, 24; M.A, Catholic, 29. Notre Dame, 29-, head dept, 36-.

BOLLEY, Henry L, *Botany* (starred), *Bacteriology.* Holman, Ind, 2/1/65; m. 96, 31, c. 2. B.S, Purdue, 88, M.S, 89, hon. Ph.D, 37. Purdue, 89-90; N. D. Col, 90-46. Breeding for disease resistance.

BOLT, John A., *Organic chemistry.* Raymond, Minn, 5/4/05; m. 33, c. 2. A.B, Calvin Col, 29; M.S, Michigan, 30. Standard Oil Co. Ind, 30-47. Diesel fuels.

BOLTON, J(ohn) W(ard), *Metallurgy.* Terre Haute, Ind, 1/20/97; m. 18. B.Sc, Rose Poly. Inst, 18, M.Sc, 21; hon. Ch.E, 25. Lunkenheimer Co. (O.), dir. res, 26-. Copper and nickel base alloys; cast steel.

BOLTZ, David F(erdinand), *Chemistry.* Belfield, N. Dak, 5/31/16; m. 42. B.A, Wisconsin, 38; M.S, Mo. Sch. Mines, 40; Ph.D, Purdue, 46.

BOLYARD, N(elson) W(ayne), *Chemistry.* Terra Alta, W. Va, 5/4/01; m. 27. B.S, Okla. A. & M. Col, 22, M.S, 25; Ph.D, Wisconsin, 28; M.D, Chicago, 40. Standard Oil Co. Ind, 29-, asst. med. dir, 46-.

BOND, Charles Sumner, *Medicine.* Richmond, Ind, 6/8/56; m. 83, 16, c. 2. M.D, N. Y. U, 83; M.S, Earlham Col, 87. Practicing physician, 83-45. Ind. Med. Soc. (ex-pres.).

BOND, George S., *Medicine.* Richmond, Ind, 9/23/84; m. 11, c. 1. B.S, Earlham Col; A.B, Michigan, 05, M.D, 06. Indiana, 14-, prof, 33-. Cardiology.

BONECUTTER, Thelma W(ard), *Chemistry.* Kirklin, Ind, 7/1/15; m. 41, c. 1. A.B, Indiana, 37, M.A, 38, Ph.D, 42. Gen. Motors, Allison div. (Ind.), 43-. Acetylene.

BONHAM, Lewis L(uther), *Radio engineering.* Jasonville, Ind, 7/19/21. B.S, Purdue, 43. U. S. Naval Res. Lab, 43-.

BONNS, W(alter) W(eidenfeld), *Botany.* Milwaukee, Wis, 4/9/77. B.S, Mass. Inst. Tech, 99; B.S.A, Cornell, 09; Ph.D, Washington (St. Louis), 18. Eli Lilly & Co, dir. res, 18-21. Enzyme action.

BOOE, J(ames) M(arvin), *Chemistry.* Austin, Ind, 11/12/06; m. 38, c. 3. B.S, Butler, 28. P. R. Mallory & Co. (Indianapolis), 29-. Electroplating.

BOOK, W(illiam) F(rederick), *Psychology.* Princeton, Ind, 6/10/73, died, 40. A.B, Indiana, 00; Ph.D, Clark, 06. Indiana, prof, 12-37. Skills; higher thought processes.

BOOKHOUT, Byron R(eid), *Farm management.* Otego, N. Y, 11/27/14; m. 44. B.S, Cornell, 39, M.S, 40; Ph.D, Purdue, 42. Mich. State Col, 44-.

BOORD, Cecil E(rnest), *Chemistry.* Veedersburg, Ind, 6/29/84. A.B, Wabash Col, 07; A.M, Ohio State, 09, Ph.D, 12. Ohio, 14-, prof, 24-.

BORDENCA, Carl, *Organic chemistry.* Birmingham, Ala, 8/13/16; m. 39, c. 2. B.S, Howard Col, 36; M.S, Ga. Inst. Tech, 38; Ph.D, Purdue, 41. South. Res. Inst, 45-.

BORDERS, A(lvin) M(arshall), *Chemistry.* Mays, Ind, 3/7/14; m. 37, c. 2. A.B, Indiana, 35, Ph.D, 37. Goodyear Tire & Rubber Co, res. co-ordinator, 47-49.

BORDNER, Earl R(aymond), *Physics.* Columbia City, Ind, 7/10/95; m. 25, c. 1. A.B, Wabash Col, 22, A.M, 23. Penn. State Col, 23-.

BOSWELL, Charles L(eland), *Organic chemistry.* Buncome, Ill, 1/31/17; m, c. 1. B.S, S. Dak. State Col, 38; Ph.D, Purdue, 41. Eli Lilly & Co, res. chem, 41-46.

BOTKIN, Clayton Winfield, *Chemistry.* La Fontaine, Ind, 10/13/79; m. 08, c. 2. A.B, Indiana, 08; A.M, Wisconsin, 14. New Mex. State Teachers Col, 21-.

BOTSET, Holbrook G(orham), *Petroleum engineering.* Plymouth, Ind, 10/23/00; m. 31. B.S, Purdue, 22. Pittsburgh, 46-.

BOTTORFF, Edmond (Milton), *Organic chemistry.* Milroy, Ind, 9/14/16. A.B, Hanover Col, 37; Ph.D, Illinois, 41. Eli Lilly & Co, res. chem, 47-.

BOUCHARD, Harry, *Civil engineering.* Michigan City, Ind, 2/1/89; m. 13, c. 3. B.C.E, Michigan, 11. Michigan, asst. prof, 18-, prof, 28-.

BOUCHER, Carl O(pdycke), *Dentistry.* Ft. Wayne, Ind, 10/14/04; m. 31, c. 1. D.D.S, Ohio State, 27. Ohio State, prof, 28-.

BOURLAND, James Fagan, *Chemistry.* Ft. Smith, Ark, 6/3/15. B.S, Arkansas, 36; M.S, Purdue, 38, Ph.D, 41. Am. Cyanamid Co, Calco Chem. Div, 41-.

BOWEN, Paul R(oss), *Botany.* Catline, Ind, 7/13/02; m. 44. A.B, DePauw, 25; M.A, Yale, 29, Ph.D, 31. Natl. Agri. Col, dean, 46-.

BOWERS, Paul C(romer), *Chemistry.* Muncie, Ind, 12/13/87. B.S, Vanderbilt, 10, M.S, 11, Sc.D, 13. Dupont Co, res. chem, 19-.

BOWLES, Gordon T., *Physical anthropology.* Tokyo, Japan, 6/25/04. A.B, Earlham Col, 25; Ph.D, Harvard, 35. Hawaii, prof, 38-.

BOWLES, Lester L(lewellyn), *Anatomy.* Tipton Co, Ind, 2/1/07; m. 33, c. 2. A.B, Franklin Col, 34; M.D, Indiana, 38. Georgia, prof, 48-.

BOWLES, R(ichard) Scott, *Chemical engineering.* Muncie, Ind, 8/20/09; m. 41, c. 2. B.S.Ch.E, Purdue, 31. Ball Bros. Co. (Ind.), asst. chem, 31-36; Procter & Gamble, 37-.

BOWMAN, Donald E(dwin), *Biochemistry.* Orrville, O, 11/12/08; m. 34, c. 2. A.B, Western Reserve, 33, A.M, 35, Ph.D, 37. Indiana, sch. med, prof, 41-.

BOWMAN, Geo(rge) F(rederick), *Horticulture.* Huntington, Ind, 5/4/04; m. 30, c. 1. B.S.A, Arkansas, 26. United Fruit Co, agron, 29-48.

BOWMAN, Fred E(llsworth), *Metallurgy.* Monticello, Ind, 3/11/13; m. 44, c. 3. B.S, Purdue, 37, Ph.D, 47.

BOWMAN, Jay, *Chemistry,* Minneapolis, Minn, 2/13/86; m. 18, c. 1. B.S, Valparaiso, 17. John Crerar Library (Chicago), res. cons, 47-.

BOWMAN, Max I., *Organic chemistry.* Weston, O, 11/4/11; m. 38, c. 1. A.B, DePauw, 32; Washington (St. Louis); M.S, Illinois, 34; Ph.D, Indiana, 37.

BOWMAN, Norman J., *Organic chemistry.* Chicago, Ill, 8/13/18. A.B, Cornell, 41, M.S, 42, Ph.D, 44. Standard Oil Co. Ind, 45-.

BOYD, G(eorge) E(dward), *Physical chemistry.* Evansville, Ind, 9/1/12; m. 42, c. 1. B.S, Chicago, 33, Ph.D, 37. Chicago, 39-48, assoc. prof, 45-48; Oak Ridge Natl. Lab, dir. chem. div, 49-

BOYD, Loyd Q(uinten), *Horticulture.* Plainville, Ind, 12/5/18; m. 43, c. 2. B.S, Purdue, 42. Studebaker, aviation div. (Ind.), 42-44; Standard Oil Co. Ind, 45-. Insecticide toxicants.

BOYD, Paul P(rentice), *Mathematics.* Cameron, W. Va, 2/26/77. A.B, Oberlin Col, 98; A.M, Cornell, 05, Ph.D, 11. Hanover Col, prof, 06-12; Kentucky, dean col. arts and sci, 17-47.

BOYD, Thomas, *Organic chemistry.* Akron, O, 12/24/13; m. 41, c. 2. B.S, Akron, 36; Ph.D, Purdue, 41. Monsanto Chem. Co, 41-.

BOYD, William Foster, *Chemistry.* Madison, Ind, 3/8/04; m. 39, c. 1. A.B, Hanover Col, 28; M.A, Indiana, 33. Ind. high schs, 28-32; Wm. S. Merrell Co, res. chem, 44-.

BOYER, Marion Willard, *Chemistry.* Muncie, Ind, 8/14/01; m. 39, c. 1. B.S, Mass. Inst. Tech, 25, M.S, 26. Esso Standard Oil Co, v.p, 45-.

BOYLE, A(ndrew) J(oseph), *Chemistry.* Cannanea, Mex, 12/21/06; m. 35, c. 1. B.S, Notre Dame, 28, M.S, 29, Ph.D, 31. Notre Dame, 31-, prof, 41-, head dept, 46-.

BRACEWELL, Kent H(enry), *Physics.* Roodhouse, Ill, 1/11/05; m, c. 2. A.B, Ill. Col, 27; M.S, Illinois, 28; Ph.D, Indiana, 38. Hamline, 31-, prof, 41-.

BRADBURY, Elmer J(oseph), *Chemical engineering.* Kokomo, Ind, 6/26/17; m. 46. B.S, Purdue, 42. Battelle Mem. Inst, res. eng, 45-.

BRADDOCK, J(ames) C(onger), *Zoology.* N. Y. C, 9/20/13; m. 34, c. 1. A.B, Williams Col, 35; Ph.D, Chicago, 42. Indiana, exten, 38-42.

BRADLEY, C(harles) E(dward), *Chemistry.* Galesburg, Ill, 2/22/74; m. 00, c. 3. B.S, Pacific, 97, M.S, 00. Mishawaka Rubber & Woolen Mfg. Co. (Ind.), 13-17; Calif. Inst. Tech, 46-.

BRADLEY, E(ncil) Morton, *Experimental embryology.* Clinton, Ind, 5/26/11. A.B, Wisconsin, 33; Ph.D, Rochester, 38. Temple, -.

BRADLEY, Mary A., *Botany.* Wabash, Ind, 9/11/95. A.B, Franklin Col, 18; M.A, Geo. Washington, 26. Ind. high schs, 18-21; U. S. Dept. Agr, 21-.

BRADNER, Donald B(yal), *Chemical engineering.* Marion, Ind, 11/26/91; m. 13, c. 2. Dupont Co, 46-.

BRADSHAW, Anis P(eterson), *Organic chemistry.* Bloomington, Ind, 6/22/04. A.B, Indiana, 24; A.M, Columbia, 29. U. S. Dept. Agr, 29-. Stains.

BRADT, W(ilber) E(lmore), *Chemistry.* Bloomington, Ind, 2/1/00, died, 45. A.B, Indiana, 23, A.M, 24, Ph.D, 26. Maine, prof, 36-45.

BRAMKAMP, R(ichard) A(llan), *Paleontology.* Richmond, Ind, 2/3/10. B.A, Pomona Col, 30; Ph.D, California, 34. Arabian Am. Oil Co, 36-, ch. geol, 48-.

BRANAMAN, G(eorge) A(braham), *Animal husbandry.* Bedford, Ind, 4/26/93; m. 24, c. 2. B.S, Purdue, 18; M.S, Mich. State Col, 26; Ph.D, Illinois, 39. Mich. State Col, assoc. prof, 23-.

BRANDENBERGER, Edward G(ottlieb), *Organic chemistry.* Evansville, Ind, 12/15/21. B.S, Mich. State Col, 47. Dupont Co, 47-.

BRANDENBURG, G(eorge) C(linton), *Psychology.* Volga, Ia, 12/2/78, died, 34. Ph.B, Drake, 10; A.M, Colorado, 14; Ph.D, Wisconsin, 15. Purdue, prof, 16-34.

BRANDON, J(oseph) F(ranklin), *Agronomy.* Daviess Co, Ind, 4/19/91; m. 20, c. 3. B.S, Illinois, 16. U. S. Dept. Agr, Akron Field Sta, 16-.

BRANDVOLD, William W(illis), *Chemical engineering.* Huron, S. Dak, 3/11/13; m. 37, c. 2. B.S, S. Dak. Sch. Mines, 37. Universal Atlas Cement Co. (Gary), 46-.

BRANIN, M(anlif) Lelyn, *Biochemistry.* Camden, N. J, 1/27/01; m. 27, c. 1. B.S, Purdue, 23; A.M, Columbia, 30; Ph.D, Michigan, 34. Newark Col, eng, 46-.

BRANNER, J(ohn) C(asper), *Geology.* (starred). New Market, Tenn, 7/4/50, died, 22. B.S, Cornell, 82; Ph.D, Indiana, 85; D.Sc, Chicago, 16. Indiana, prof, 85-91; Stanford, 91-15, v.p, 99-13, pres, 13-15. Natl. Acad. Sci; Geol. Soc. Am. (pres, 04).

BRANNON, Melvin Amos, *Botany.* Lowell, Ind, 9/11/65, died, 50; m. 92, c. 2. A.B, Wabash Col, 89, A.M, 90, LL.D, 32; Ph.D, Chicago, 12. Ind. high schs, 90-94; Idaho, pres, 14-17; Beloit Col, pres, 17-23; Montana, chancellor, 23-33.

BRANSON, J(ohn) W(illiam), *Mathematics.* London, Ky, 2/22/88; m. 16. Ph.B, Chicago, 20; M.S, Purdue, 27. Purdue, instr, 21-27; New Mexico, prof, 27-46.

BRAY, John Leighton, *Metallurgy.* Millbridge, Me, 8/11/90; m. 25, c. 2. B.S, Mass. Inst. Tech, 12, Sc.D, 30. Purdue, prof, 23-, head sch. chem. and metal. eng, 35-.

BRAY, Malcolm D(avonne), *Chemistry.* Noblesville, Ind, 2/29/16; m. 41, c. 1. A.B, Indiana, 38; Ph.D, Mass. Inst. Tech, 41. Eli Lilly & Co, 45-.

BRAY, William (L.), *Botany* (starred). Burnside, Ill, 9/19/65, died, 50; m. 99, c. 3. A.B, Indiana, 93; A.M, Lake Forest Col, 94; Ph.D, Chicago, 98. Syracuse, 02-43, dean grad. sch, 18-43. Plant geography.

BRAYTON, Alembert Winthrop, *Medicine.* Avon, N. Y, 3/4/48, died, 26. B.S, Butler, 78, M.S, 80; M.D, Indiana, 79, M.S, 82; Ph.D, Purdue, 85. Ind. Med. Col, prof, 82-26; *Ind. Med. Journal,* ed, 92-11. Author: *Birds of Indiana,* 85.

BREEZE, Frederick J(ohn), *Geography.* Welshpool, Wales, 8/10/73, died, 43. Grad, Ind. State Nor. Sch, 99; B.S, Purdue, 10, M.S, 12. Ind. State Nor. Sch, prof, 18-30, dean sci, 22-30. Ind. Acad. Sci. (v.p, 27).

BREITWIESER, J(oseph) V(alentine), *Educational psychology.* Jasper, Ind, 3/31/84, died, 50; m. 09, c. 5. A.B, Indiana, 07, A.M, 08; Ph.D, Columbia, 11. North Dakota, dean sch. educ, 27-50.

BRELAND, Osmond P(hilip), *Entomology.* Decatur, Miss, 9/17/10; m. 31, c. 2. B.S, Miss. State Col, 31; Ph.D, Indiana, 36. Texas, 38-, assoc. prof, 46-.

BRENEMAN, William Raymond, *Zoology.* Indianapolis, Ind, 6/3/07; m. 30, c. 3. A.B, Ind. Central Col, 30; Ph.D, Indiana, 34. Indiana, 36-, prof, 47-. Endocrinology.

BREON, Willard S(tover), *Agricultural chemistry.* State College, Pa, 5/29/16; m. 41, c. 1. B.S, Pa. State Col, 37; M.S, New Hampshire, 39; Ph.D, Purdue, 42. P. B. F. Co. (W. Lafayette, Ind.), v.p, 46-. Mineral nutrition of the tomato.

BREUNIG, H(enry) Latham, *Organic chemistry.* Indianapolis, Ind, 11/19/10; m. 38, c. 3. A.B, Wabash Col, 34; Ph.D, Hopkins, 38. Eli Lilly & Co, 38-. Antimalarials; chemotherapeutics.

BREWER, P(earl) Harvey, *Agricultural chemistry.* Upper Sandusky, O, 12/10/83. A.B, Defiance Col, 19; M.S, Purdue, 31. Purdue, 20-, asst. prof, 33-. Soybean oil.

BREWER, R(alph) E(mmet), *Chemical engineering.* Chariton, Ia, 1/16/93; m. 31, c. 3. A.B, Simpson Col, 17; M.S, Purdue, 20; Ph.D, Minnesota, 28. Purdue, instr, 19-21; U. S. Bur. Mines (Pittsburgh), 35-.

BRIDGE, Lawrence R(aymond), *Mechanical engineering.* Columbia City, Ind, 8/2/00; m. 25, c. 1. B.S, Purdue, 25, M.S, 32. Ind. Service Corp, combustion eng, 24-25; Wright Field, lab, 39-.

BRIDGES, Ralph W(aldo), *Chemistry.* Martinsville, Ind, 12/30/83, died, 46. B.S, DePauw, 05; A.M, Indiana, 08. Aluminum Co. Am, asst. ch. chem, 19-46.

BRIED, Edward A., *Organic chemistry.* Newark, N. J, 7/13/12; m. 38, c. 4. B.S, Notre Dame, 35, Ph.D, 38. Hercules Powder Co, 40-.

BRIGHAM, George D(exter), *Bacteriology.* Meriden, Conn, 5/11/03; m. 32. B.S, Conn. Agr. Col, 26, M.S, 29; Ph.D, Yale, 33. Pitman Moore Co. (Ind.), 44-47. Mastitis; rickettsial diseases.

BRILMYER, George J(oseph), *Pathology.* New Haven, Ind, 5/17/91; m. 18, c. 5. B.S, Alma Col, 13; M.S, Michigan, 18; M.D, Geo. Washington, 25. U.S. Veterans Hosp. (Pa.), ch, lab, 47-.

BRINK, Paul L(ouis), *Engineering.* Cincinnati, O, 10/31/22; m. 45, c. 1. B.S, Purdue, 43. Curtiss-Wright Corp, 43-44; Naval Ordnance Plant (Indianapolis), res. phys, 46-.

BRISCOE, Charles F(rancis), *Bacteriology.* DePauw, Ind, 11/1/68, died, 50; m. 00, 27, c. 1. A.B, Indiana, 99; A.M, Illinois, 05, Ph.D, 12. Ind. schs, 88-92; Miss. State Col, prof, 12-.

BRISCOE, Herman T(hompson), *Chemistry.* Shoals, Ind, 11/6/93; m. 28, c. 4. A.B, Indiana, 17, A.M, 23, Ph.D, 24. Indiana, 22-, prof, 28-, chm. dept, 38-41, dean faculties, 40-42, v.p, 42-.

BRITT, Eugene M(aurice), *Bacteriology.* Chicago, Ill, 3/2/24; m. 47. A.B, Valparaiso, 47; M.S, Illinois, 49. Miles Labs. (Elkhart, Ind), 48-. Medical bacteriology.

BRITTON, Edgar C(lay), *Organic chemistry.* Rockville, Ind, 10/25/91; m. 16, 37, c. 5. A.B, Michigan, 14, Ph.D, 18. Dow Chem. Co, 20-, dir. org. res. lab, 32-.

BRITTON, M(ax) E(dwin), *Botany.* Hymera, Ind, 1/26/12; m. 37. A.B, Ind. State Col, 34; M.S, Ohio State, 37; Ph.D, Northwestern, 41. Northwestern, 37-, assoc. prof, 47-.

BROCK, James E(phraim), *Physics.* Marion, Ind, 11/22/91; m. 16, c. 2. A.B, Indiana, 19, A.M, 23, Ph.D, 28. Ind. pub. schs, 10-23; Indiana, instr, 23-24; Purdue, instr, 26-30, assoc. eng, exp. sta, 43-.

BROCK, Marlyn J(ean), *Chemistry.* Indianapolis, Ind, 2/25/19; m. 45, c. 1. B.S, Butler, 43; Ph.D, Illinois, 46. Firestone Tire & Rubber, 46-. Microscopy.

BROCKMANN, M(axwell) C(urtis), *Bacteriology.* Sioux Falls, S. Dak, 12/2/10; m. 35, c. 2. B.S, Iowa State Col, 31, M.S, 33; Ph.D, Indiana, 46. Hiram Walker & Sons (Ill.), 34-42; Jos. E. Seagram & Sons, 42-.

BRODERSON, H(enry) J(ohn), *Chemistry.* Minneapolis, Minn, 10/7/83. A.B, Nebraska, 09; A.M, Kansas, 11; Ph.D, Cornell, 13. Standard Oil Co. Ind, 17-34.

BRODIE, Donald C(rum), *Pharmacy.* Carroll, Ia, 3/29/08; m. 34. B.S, South. California, 34, M.S, 38; Ph.D, Purdue, 44. Purdue, instr, 38-44; California, assoc. prof, 47-.

BRODIE, H(arold) J(ohnston), *Mycology.* Winnipeg, Man, Can, 12/3/07; m. 34, c. 2. M.Sc, Manitoba, 30; Ph.D, Michigan, 34. Indiana, asst. prof, 46-. Plant pathology.

BROEG, Charles B(urton), *Chemistry.* Princeton, Ind, 3/15/16; m. 46. A.B, DePauw, 38; M.S, Okla. A. & M. Col, 40. U. S. Dept. Agr, 41-.

BROENE, Herman H(enry), *Chemistry.* Grand Rapids, Mich, 12/28/19; m. 44. A.B, Calvin Col, 42; Ph.D, Purdue, 47. Eastman Kodak, 46-.

BROMER, John A(lbert), *Psychology.* Cedar Rapids, Ia, 6/12/15; m. 34, c. 3. A.B, Franklin & Marshall Col, 36; A.M, Wisconsin, 38, Ph.D, 40. Purdue, instr. to assoc. prof, 40-48.

BROMER, Richard Frank, *Psychology.* Cedar Rapids, Ia, 8/4/20; m. 42, c. 1. A.B, Franklin and Marshall Col, 42; M.A, Virginia, 43; Ph.D, Purdue, 48. Psychological Corp, 48-.

BROOKS, Charles, *Plant pathology.* Salem, Ind, 4/4/72; m. 19, c. 3. A.B, Ind. State Nor. Col, 99; A.B, Indiana, 04; A.M, Missouri, 05, Ph.D, 08. U. S. Dept. Agr, 12-42.

BROOKS, Fowler D(ell), *Psychology.* Adelphi, O, 1/16/85; m. 14, c. 2. A.B, Baker, 11; A.M, Oklahoma, 15; Ph.D, Columbia, 21. DePauw, 24-, prof, 40-. Mental growth.

BROOKS, James S(tanley), *Plant cytology and morphology.* Salem, Ind, 10/24/08; m. 38, c. 4. A.B, Indiana, 31; Ph.D, Cornell, 40. Okla. A. & M. Col, 40-. Corn; the Lemnaceae.

BROOME, F(rederick) Kennett, *Organic chemistry.* Knoxville, Tenn, 6/8/15; m. 42, c. 1. B.S, Tennessee, 36; M.S, Minnesota, 38; Ph.D, Purdue, 45. Armour & Co, 43-.

BROSSMAN, Charles, *Civil engineering.* Philadelphia, Pa, 1/1/87, died, 37; m. 03, c. 3. Cons. eng. (Indianapolis), 04-37. Ind. Eng. Soc. (ex-pres.).

BROTHER, George M(iller), *Public health.* Rockport, Ind, 10/22/07; m. 37, c. 4. A.B, Indiana, 31, M.D, 34; M.P.H, Hopkins, 39. State Bd. Health, Ind, 37-, dir. prev. med, 46-.

BROUSE, Don, *Chemistry.* Kendallville, Ind, 8/19/95; m. 44. B.S, Purdue, 21, Ch.E, 27; Ph.D, Wisconsin, 31. U. S. Forest Serv, forest prods. labs, 23-.

BROWN, A(rthur) B(ennett), *Chemistry.* Charleston, S.C, 7/17/99; m. 27, c. 2. B.A, Col. Charleston, 18; Ph.D, Hopkins, 22. Standard Oil Co. Ind, 22-.

BROWN, Charles Carroll, *Civil engineering.* Austinburg, O, 10/4/56, died, 48. C.E, Michigan, 79. Rose Poly. Inst, prof, 83-86; city eng, Indianapolis, 93-95; Valparaiso, 17-20, dean col. appl. sci, 19-20.

BROWN, Earl H(enderson), *Chemistry.* Muskegon, Mich, 5/29/00. B.S, Kalamazoo Col, 23; M.S, Brown, 26, Ph.D, 27. Wabash Col, asst. prof, 27-30; Tenn. Valley Authority, 41-.

BROWN, F(ay) C(luff), *Physics* (starred). Washington, O, 11/23/81; m. 08, c. 4. A.B, Indiana, 04; A.M, Illinois, 06; Ph.D, Princeton, 08. U. S. Bur. Standards, dir, 20-27.

BROWN, Ferdinand Louis, *Mathematics.* Portsmouth, O, 12/9/16. A.B, Notre Dame, 38, M.S, 45, Ph.D, 47. Notre Dame, instr, 45-.

BROWN, F(rank) N(ewton) M(ither), *Aeronautical engineering.* Jamestown, N. Dak, 9/16/02. B.S, Michigan, 28, M.S, 32. Notre Dame, head dept, 35-.

BROWN, Glen Francis, *Geology.* Graysville, Ind, 12/14/11; m. 41. B.S, N. Mex. Sch. Mines, 35; M.S, Northwestern, 40, Ph.D, 49. U. S. Geol. Surv, 46-.

BROWN, Harry Bates, *Botany.* Delphi, Ind, 6/9/76; m. 11, c. 3. A.B, Indiana, 06, A.M, 07; Ph.D, Cornell, 10. Louisiana, exp. sta, cotton breeder, 26-46.

BROWN, Herbert C(harles), *Inorganic and organic chemistry.* London, Eng, 5/22/12, nat, 36; m. 37, c. 1. B.S, Chicago, 36, Ph.D, 38. Purdue, 46-, prof, 47-.

BROWN, H(oward) D(exter), *Agriculture.* Selma, Ill, 12/7/91; m. 15. B.S, Illinois, 14, M.S, 17; Ph.D, Mich. State Col, 27. Purdue, assoc. prof, 19-29.

BROWN, J(ames) Howard, *Chemistry.* Attica, Ind, 12/16/10; m. 36, c. 2. A.B, Wabash Col, 32; M.S, Vanderbilt, 33; Ph.D, Illinois, 37. Oldbury Chem. Co, 37-.

BROWN, John Pinkney, *Arboriculturist.* Rising Sun, Ind, 1/19/42, died, 15. Int. Soc. Agr, organized and later secy. and treas; ed, *Arboriculture;* author, *Practical Arboriculture* (06).

BROWN, John Stewart, *Chemistry.* Chicago, Ill, 6/7/18; m. 43, c. 2. B.S, Chicago. Standard Oil Co. Ind, 48-.

BROWN, J(ohn) S(tilwell), *Electrical engineering.* Chicago, Ill, 9/1/16; m. 40, c. 3. B.S, Purdue, 30. Andrew Corp. (Chicago), 43-.

BROWN, K(enneth) R(ent), *Chemistry.* Pendleton, Ind, 7/30/96; m, c. 3. A.B, Swarthmore Col, 18. Atlas Powder Co, exp. lab, 18-.

BROWN, L(ouis) F(rancis), *Physics.* Windfall, Ind, 3/13/05; m. 29. A.B, Indiana, 26, Ph.D, 29; A.M, Yale, 28. Res. Prods. Co, 29-41.

BROWN, Mary J(ane), *Zoology*. Nashville, Ind, 10/14/95; m. A.B, Butler, 19; M.S, Washington (St. Louis), 21; Ph.D, Oklahoma, 29. Wyoming, 29-43.

BROWN, O(liver) W., *Physical and electro-chemistry*. Vermillion Grove, Ill, 6/25/73. B.S, Earlham Col, 95; A.M, Indiana, 96. Indiana, 99-43, assoc. prof, 06-21, prof, 21-43. Storage batteries.

BROWN, Rodney G(arrett), *Chemistry*. Elkhart, Ind, 5/1/15; m. 40, c. 2. B.A, Oberlin Col, 37. Dupont Co, 37-.

BROWN, Ryland T., *Scientist*. Lewis Co, Ky, 10/5/07, died, 90. M.D, Ohio Med. Col, 29; A.M, Wabash Col, 50. Practiced medicine and preached, Connersville, 32-44, Crawfordsville, 44-45; asst. state geol, 54-84; N. W. Christian Col. (Butler U.), prof. sci, 58-71—wrote extensively on drainage, fertilization, geology; Ind. Med. Col, prof. chem, 69-71; U. S. Dept. Agr, chem, 71-81; wrote on geology of Marion County (82), Morgan County (83), Hamilton and Madison Counties (84). Influential leader in Indiana science, 44-71.

BROWN, S(impson) L(eroy), *Physics*. Indianapolis, Ind, 11/23/81; m, c. 1. A.B, Indiana, 05, A.M, 07; Ph.D, California, 09. Texas, prof, 25-.

BROWN, V(irginius) E(lholm), *Biology, Paleontology*. Sparta, Ga, 12/10/02. B.S, Emory, 25, M.S, 26; Ph.D, California, 31. Taylor, assoc. prof, 39-.

BROWN, W(ilbur) V(incent), *Astronomy*. Hope, N. J, 3/27/60, died, 28. B.S, Stevens Inst. Tech, 80, Ph.D, 89. DePauw, 85-28, prof, 96-28.

BROWN, W(illiam) L(ee), *Chemistry*. Greensboro, N. C, 10/8/01; m. 27, c. 3. B.S, North Carolina, 23; N. Y. U, 34. Eli Lilly & Co, ch. microchem, 44-.

BROWNLEE, R(oy) H(utchison), *Chemistry*. Alexis, Ill, 12/12/76, died, 12. A.B, Monmouth Col, 98; Ph.D, Chicago, 06. Standard Oil Co. Ind, 07-12.

BROXON, James William, *Physics*. Whitley Co, Ind, 7/12/97; m. 22, c. 2. A.B, Wabash Col, 19; A.M, Minnesota, 20, Ph.D, 26. Colorado, 22-, prof, 29-. Cosmic rays.

BROYLES, Ralph E(dward), *Chemistry*. Elwood, Ind, 6/25/09; m. 42. A.B, Indiana, 32, A.M, 33, Ph.D, 42. Indiana, exten, 41-45, asst. prof, 45-.

BRUCE, Edwin M(orris), *Chemistry*. Thorntown, Ind, 10/23/66, died, 43. A.B, Indiana; M.S, Chicago, 16. Ind. State Teachers Col, prof, 05-35.

BRUCE, Robert W(allace), *Psychology*. Crown Point, Ind, 4/7/00. A.B, Wabash Col, 22; A.M, Chicago, 24, Ph.D, 29. Wabash Col, 22-, assoc. prof, 26-.

BRUCKNER, J(acob) Herbert, *Poultry husbandry*. Anaconda, Mont, 5/14/05; m. 30, c. 4. B.S, Purdue, 30; Ph.D, Cornell, 35. Cornell, head dept, 42-.

BRUECKNER, Alfred H(erold), *Bacteriology*. Providence, R. I, 5/2/14; m. 39. B.S, Massachusetts, 36; M.S, Purdue, 38; Ph.D, Yale, 43. Pitman-Moore Co. (Ind.), 38-, assoc. dir. res, 46-.

BRUEHL, George W(illiam), *Plant pathology*. Mentone, Ind, 9/10/19. B.S.A, Arkansas, 41; Ph.D, Wisconsin, 48. S. Dak. State Col, 48-.

BRUETSCH, Walter L., *Psychiatry, Neurology*. Singen, Germany, 11/25/96, nat, 30. A.B, Daves (Switzerland), 17; M.D, Freiburg, 22. Indiana, sch. med, 25-, asst. prof, 31-37, clin. prof, 37-.

BRUMBLAY, Ray U(lysses), *Chemistry*. Azusa, Calif; m. 41, c. 3. A.B, Indiana, 34; Ph.D, Wisconsin, 38. Indiana, instr, 38-43.

BRUNDAGE, Everett G(riffin), *Psychology*. Buffalo, N. Y, 6/14/08; m. 33. B.A, Canisius Col, 29; Ph.D, Indiana, 40. Bur. Naval Personnel, head classification res, 46-.

BRUNER, H(arry) D(avis), *Physiology*. Jeffersonville, Ind, 7/11/11; m. 31, c. 2. S.B, Louisville, 30, M.D, 34, S.M, 36; Ph.D, Chicago, 39. North Carolina, 39-42.

BRUNER, H(enry) L(ane), *Zoology*. Knox Co, Ill, 1/10/61, died, 45. A.B, Abingdon (Eureka Col.), 80; Ph.D, Freiburg, 96. Butler, prof, 92-38, dir. grad. studies, 32-38. Ind. Acad. Sci. (pres, 19). Amphibians.

BRUNINGS, J(ohanna) H. M., *Physics*. Didam, Netherlands, nat, 45. Ph.D, Leiden, 38. Purdue, instr, 41-47.

BRUNSON, A(rthur) M(axwell), *Agronomy*. Joliet, Ill, 3/26/91; m. 19, c. 1. B.S, Illinois, 13; Ph.D, Cornell, 23. Purdue exp. sta, 38-. Basis of hybrid corn vigor.

BRUNSTRUM, Lawrence C(arl), *Chemistry*. Chicago, Ill, 8/3/07; m. 32, c. 2. B.S.Ch.E, Armour Inst. Tech, 29. Standard Oil Co. Ind, group leader, 29-.

BRYAN, William Lowe, *Psychology* (starred). Bloomington, Ind, 11/11/60. A.B, Indiana, 84, A.M, 86; Ph.D, Clark, 92. Indiana, 86-, v. p, 93-02, pres, 02-37, emer, 37-.

BUCHANAN, John M(achlin), *Biochemistry*. Winamac, Ind, 9/29/17; m. 48. A.B, DePauw, 38; M.S, Michigan, 39; Ph.D, Harvard, 43. Pennsylvania, 43-.

BUCHANAN, Robert F(rancis), *Chemistry*. Darlington, Ind, 2/19/18; m. 42, c. 2. B.S, Indiana, 40. Allison Eng. Co. (Indianapolis), 40-45. Alloys.

BUCHER, Carl J(oseph), *Pathology*. Logansport, Ind, 3/21/90. B.S, Pennsylvania, 12, M.D, 16. Jefferson Med. Col. Hosp, 25-, dir. clin. lab, 40-.

BUCK, James G(ray), *Physics*. Torrington, Conn, 2/25/18. A.B, Dartmouth Col, 40; Ph.D, Mass. Inst. Tech, 42. Notre Dame, asst. prof, 46-.

BUCK, Miriam G(ertrude), *Chemistry*. Vincennes, Ind, 9/6/97. A.B, Illinois, 20, M.S, 21; Ph.D, Chicago, 35. Vincennes, 21-23; Franklin Col, prof, 48-.

BUCKLEY, Wallace T(homas), *Geography*. New Hampton, Ia, 8/29/03; m. 30, c. 1. B.S, Washington, 29, M.S, 30; Ph.D, Ohio State, 36. Indiana, 36-47, asst. prof, 41-47; Wash. State, assoc. prof, 47-.

BUFFINTON, R(alph) M(ulvaney), *Physical chemistry*. Ness City, Kans. 12/20/96; m. 28, c. 3. A.B, Kansas, 18, A.M, 21; Ph.D, California, 23. Servel, Inc. (Evansville), 33-.

BUGBEE, Robert E(arl), *Entomology*. Bemus Point, N. Y, 8/12/07; m. 36, c. 5. B.S, Allegheny Col, 31; Ph.D, Indiana, 36. Indiana, res. assoc, 42-45; Allegheny, prof, 47-.

BUGENTAL, J(ames) F(rederick) T(homas), *Psychology*. Ft. Wayne, Ind, 12/25/15; m. 39, c. 2. B.S, W. Tex. State Col, 40; M.A, Peabody Col, 41; Ph.D, Ohio State, 48. California L.A, 48-.

BUGHER, John C(lifford), *Pathology*. Upland, Ind, 9/26/01. A.B, Michigan, 21, M.D, 29, M.S, 32. Rockefeller Found, int. health div, 38-.

BUKEY, F(red) S(cott), *Pharmacy*. Ravenna, Nebr, 9/13/00; m. 23. B.S, M.S, Nebraska; Ph.D, Purdue, 38. Nebraska, asst. prof, 26-.

BULL, R(obert) A(lexander), *Metallurgy*. New Albany, Ind, 6/28/74, died, 37. A.B, Butler, 97. Cons. eng, 20-37.

BULL, W(illard) C(lare), *Chemistry*. Rochelle, Ill, 6/24/15; m. 39, c. 2. B.A, Cornell Col, 36; M.A, Illinois, 41. Commercial Solvents Corp. (Terre Haute), 46-.

BULLARD, John, *Veterinary science*. Brooklyn, N. Y, 11/4/99; m. 26, c. 2. D.V.M, Cornell, 22; M.S, Kans. State Col, 30. Purdue, assoc. prof, 29-.

BULLER, Francis P., *Psychology*. Bradshaw, Nebr, 12/24/91; m. 18, c. 2. A.B, McPherson Col, 19; A.M, Yale, 23, Ph.D, 27. Evansville Col, 44-.

BULLIET, Mildred I(dell) Williams, *Physics*. Canton, Ill, 3/20/04; m. 35, c. 2. A.B, Valparaiso, 25; A.M, Indiana, 29, Ph.D, 35. Rockford Col, 42-.

BUNDE, Carl A(lbert), *Medical physiology*. Ashland Co, Wis, 4/22/07; m. 30. A.B, Wisconsin, 33, A.M, 34, Ph.D, 37; M.D, Southwest Med. Col, 48. Pitman-Moore Co. (Indianapolis), res. dir, 49-.

BUNISH, Steve, *Chemistry*. Leechburg, Pa, 5/23/19; m. 43, c. 1. A.B, Marion Col, 45. Anaconda Wire & Cable Co. (Marion, Ind.), 42-.

BURBANCK, W(illiam) D(udley), *Animal ecology*. Indianapolis, Ind, 8/20/13; m. 40, c. 2. A.B, Earlham Col, 35; Ph.D, Chicago, 41. Earlham, instr, 36-38; Drury Col, 42-, prof, 45-.

BURBANK, Burr G., *Physics*. Whiting, Ind, 8/24/12; m. 40. A.B, San Jose State Col, 34; Ph.D, Stanford, 46. San Francisco State Col, 47-.

BURBANK, Cecil J., *Physics*. Whiting, Ind, 3/23/08; m. 40. A.B, San Jose State Col, 30; Ph.D, Stanford, 35. U. S. N. Electronics Lab, 46-.

BURD, J(ohn) S(edgwick), *Agricultural chemistry*. Indianapolis, Ind, 9/20/76. B.S, California, 99. California, 08-46, prof, 12-46. Plant nutrition, 21-46.

BURDETTE, A(lbert) C(lark), *Analysis*. Spurgeon, Ind, 2/11/05; m. 27, c. 2. A.B, Oakland City Col, 27; A.M, Indiana, 31; Ph.D, Illinois, 46. High sch. (Plainville, Ind.), 27-30; California, col. agr, 36-, asst. prof, 42-.

BURDICK, E(verette) M(arshall), *Chemistry*. Champaign, Ill, 8/9/13; m. 37. B.S, Miami (Fla.), 35; M.S, Purdue, 37, Ph.D, 43. Texsun Citrus Exch, dir. res, 46-.

BURFORD, W(illiam) B(erryman), III, *Physical chemistry*. Indianapolis, Ind, 12/8/16; m. 39. Ph.D, Hopkins, 42. Hopkins, 40-, assoc. prof, 47-.

BURGET, G(eorge) E(mmanuel), *Physiology*. Kempton, Ind, 5/18/89, died, 38. Ph.D, Chicago, 16. Oregon, prof, 17-38.

BURKETT, Howard (Benton), *Chemistry*. Putnam Co, Ind, 2/26/16; m. 36, c. 3. B.A, DePauw, 38; Ph.D, Wisconsin, 42. Eli Lilly & Co, 42-45; DePauw, asst. prof, 45-.

BURKHARD, Cha(rle)s (Austin), *Chemistry*. N. Y. C, 2/6/16; m. 40, c. 3. A.B, Ariz. State Teachers Col, 37; Ph.D, Purdue, 41. Gen. Elec, 42-.

BURKHOLDER, Alden H(artzler), *Chemistry*. Orrville, O, 2/28/04; m. 28, c. 3. B.S, Manchester Col, 28; M.S, Ohio State, 29. Indust. Rayon Corp, 29-.

BURKHOLDER, W(alter) H(agemeyer), *Plant pathology*. Crawfordsville, Ind, 2/1/91. A.B, Wabash Col, 13; Ph.D, Cornell, 17. Cornell, 21-, prof, 27-.

BURLAGE, H(enry) M(atthew), *Pharmacy, Pharmaceutical chemistry.* Rensselaer, Ind, 5/23/97; m. 25, c. 1. A.B, Indiana, 19; A.M, Harvard, 21; Ph.C, B.S, Purdue, 24; Ph.D, Washington (Seattle), 27. Purdue, assoc. prof, 29-31.

BURNEY, D(onald) E(ugene), *Organic chemistry.* Hartington, Nebr, 10/17/15; m. 42, c. 3. B.A, South Dakota, 37; Ph.D, Illinois, 41. Standard Oil Co. Ind, 41-, group leader, 47-. Synthetic detergents.

BURNEY, L(eroy) E(dgar), *Public health.* Burney, Ind, 12/31/06; m. 32, c. 2. B.S, Indiana, 28, M.D, 30; M.P.H, Hopkins, 32. Ind. State Bd. Health, com, 45-; Indiana, assoc. prof, 45-.

BURNS, Harold E(lra), *Mathematics.* Spurgeon, Ind, 12/17/09; m. 42, c. 1. A.B, Oakland City Col, 00; A.M, Indiana, 32; Ph.D, Northwestern, 42. Indiana, exten, 32-, asst. prof, 42-46, dir, 46-.

BURNS, Raymond E(dward), *Chemistry.* Muncie, Ind, 4/24/13; m. 38, c. 1. B.S, Ball State Teachers Col, 36; Ph.D, Purdue, 47. Gen. Elec, 47-.

BURR, Irving W(ingate), *Mathematics.* Fallon, Nev, 4/9/08; m. 30, c. 3. B.S, Antioch Col, 30; M.S, Chicago, 35; Ph.D, Michigan, 41. Purdue, 41-, assoc. prof, 45-.

BURR, W(illiam) W(esley), *Agriculture.* Goodland, Ind, 3/26/80. B.S, Nebraska, 06. U. S. Dept. Agr, 06-13; Nebraska, exp. sta, v. dir, 16-28. Dry land agriculture.

BURRAGE, Severance, *Sanitary science, Bacteriology.* West Newton, Mass, 7/18/68, died, 45. B.S, Mass. Inst. Tech, 92. Purdue, prof, 95-12; Eli Lilly & Co, 12-16. Ind. Acad. Sci. (pres, 14).

BURRIN, Philo L(amont), *Pharmacy.* Holgate, O, 12/11/96; m. 48, c. 1. Ph.C, Purdue, 17; Butler, 32-33; Indiana, 33-34. Eli Lilly & Co, 17-, head biol. vaccine mfg, 28-34, head dept. phar, 48-.

BURROWS, William, *Bacteriology.* New Haven, Conn, 3/6/08; m. 31, c. 1. B.S, Purdue, 28; Ph.D, Chicago, 32. Chicago, 37-, prof, 47-.

BURSLEY, Joseph A(ldrich), *Engineering.* Ft. Wayne, Ind, 6/14/77; m. 08, c. 3. B.S. (M.E.), Michigan, 99. Michigan, 04-47, dean students, 21-47.

BURT, Joseph B(ell), *Pharmacy.* Woodland, Ill, 9/8/95. Ph.C, B.S, Purdue, 20; M.S, Wisconsin, 27, Ph.D, 35. Nebraska, 20-, prof, 29-, dean col, 46-.

BURT, William E(nos), *Chemistry.* Martin, Mich, 1/12/15; m. 48. B.A, Kalamazoo Col, 38, M.S, 39; Ph.D, Purdue, 45. Ethyl Corp, 45-.

BURTON, Andrew Franklin, *Surgery.* Indianapolis, Ind, 5/31/07; m. 42. B.S, M.D, Indiana, 32; Ph.D, Chicago, 42. Howard, 35-.

BURTON, Everett Tyler, *Electrical engineering.* Brook, Ind, 4/21/93; m. 21, c. 3. A.B, Indiana, 20, A.M, 24. Bell Tel. Labs. (N. Y.), 20-.

BURTON, Helen B(rown), *Nutrition, Biochemistry.* Chicago, Ill, 1/7/89. A.B, Indiana, 11; M.S, Chicago, 22, Ph.D, 29. Oklahoma, dir. sch. home econ, 27-.

BURTON, Milton, *Physical chemistry.* Stapleton, N. Y, 3/4/02; m. 46, c. 1. B.S, N. Y. U, 22, M.S, 23, Ph.D, 25. Chicago, metal. lab, 42-45; Notre Dame, prof, 45-.

BURTON-OPTIZ, R(ussell), *Physiology* (starred), *Internal medicine.* Ft. Wayne, Ind, 10/25/75. M.D, Rush, 95; B.S, Chicago, 98, M.S, 02, Ph.D, 05. Columbia, 02-, assoc. prof, 10-23, lect, 23-. Saliva and bile.

BURTSFIELD, D(avid) R(ead), *Chemical engineering.* West Lafayette, Ind, 3/25/13; m. 47. B.S, Purdue, 35, Ph.D, 40. Merck & Co, 40-.

BUSHNELL, Thomas M(ark), *Agronomy.* Monticello, Ind, 4/5/89; m. 13, c. 5. B.S.A, Purdue, 12. Purdue, exp. sta, in chg. soil surv, 21-, assoc. prof, 40-. Soils of Indiana.

BUSSIES, Justin L(loyd), *Chemistry.* Holland, Mich, 8/27/03; m. 28, c. 2. A.B, Hope Col, 25; M.A, Ohio State, 27, Ph.D, 30. Standard Oil Co. Ind, 30-, asst. supt. light oils div, 47-.

BUSTEED, Robert C(harles), *Plant pathology.* Milan, Ind, 9/4/07; m. 30, c. 4. A.B, Indiana, 30, A.M, 32, Ph.D, 36. Georgia, prof, 47-.

BUTCHART, J(ohn) H(arvey), *Mathematics.* Hofei, China, 5/10/07; m. 29, c. 2. B.S, Eureka Col, 28; A.M, Illinois, 29, Ph.D, 32. Butler, instr, 33-36; Ariz. State Col, prof, 45-.

BUTCHER, Buford H(enry), *Chemistry.* Patriot, Ind, 5/21/87; m. 26. A.B, Hanover Col, 14; Ph.D, Iowa State Col, 26. Schlitz Brewery Co, 42-.

BUTCHER, Earl O(rlo), *Biology.* Burlington, Ind, 9/20/03; m. 29, c. 3. A.B, DePauw, 25; A.M, Cornell, 26, Ph.D, 28. N. Y. U, 43-, prof, 47-.

BUTLER, Amos W(illiam), *Anthropology, Zoology, Sociology.* Brookville, Ind, 10/1/60, died, 37; m. 80, c. 6. A.B, Indiana, 94, A.M, 00. Ind. Bd. State Charities, sec, 98-23. Am. Prison Assn, (pres, 10); Ind. Acad. Sci. highly significant in Acad's early years (pres, 95); Am. Assn. Adv. Sci. (v.p, 00). Author—*Birds of Indiana; Indiana: A Century of Progress.* Degeneracy, dependency, public charities, penology.

BUTLER, Judson C(harles), *Chemistry.* Virginia, Minn, 5/10/17; m. 40. A.B, Ohio State, 38; Ph.D, Purdue, 44. Calif. Res. Corp, 47-.

BUTTERBAUGH, Darrel J., *Chemistry.* Silverlake, Ind, 2/13/13; m. 32, c. 3. B.Sc, Nebraska, 35; Ph.D, Illinois, 38. Rohm & Haas Co, 38-.

BUTTNER, Horace Judson, *Engineering.* Hammond, Ind, 8/13/09; m. 31, c. 2. B.S, Purdue, 31, hon. M.E, 46. Packard Motor Car Co. (Ind.), ch, 44-46; Purdue, prof. automotive eng, 46-.

BUTTS, Joseph S(hirey), *Biochemistry, Agricultural chemistry.* Goshen, Ind, 12/14/03; m. 33, c. 3. B.S, Florida, 26; M.S, Fordham, 28; Ph.D, South. California, 33. Ore. State Col, prof, 39-, head dept, 46-.

BUTZ, Earl L(auer), *Agricultural Economics.* Albion, Ind, 7/3/09; m. 37, c. 2. B.S.A, Purdue, 32, Ph.D, 37. Purdue, 37-, prof, 46-.

BYBEE, Hal(bert) P(leasant) *Geology.* Rochester, Ind, 1/7/88; m. 14, c. 4. B.S, Rochester Col. (Ind.), 08; A.B, Indiana, 12, A.M, 13, Ph.D, 15. Ind. schs, 08-11; Texas, prof, 36-.

BYERLY, David Roeder, *Chemistry.* Lima, O, 1/8/08; m. 29, c. 2. A.B, Manchester Col, 29. Procter & Gamble, 29-.

BYERRUM, Richard U(glow), *Biological chemistry.* Aurora, Ill, 9/22/20; m. 45, c. 2. A.B, Wabash Col, 42; Ph.D, Illinois, 47. Mich. State Col, asst. prof, 48-.

BYERS, Cecil W(esley), *Physics.* Tennyson, Ind, 1/3/92. A.B, Indiana, 15; M.S, North Dakota, 25. Ind. high schs, 15-18; Purdue, instr, 19-21; North Dakota, 21-.

BYRKIT, Gordon D(ean), *Organic chemistry.* Indianapolis, Ind, 7/15/04; m. 29, c. 2. A.B, Kansas, 26; Ph.D, Minnesota, 30. Mathieson Chem. Corp, 43-.

BYRNE, Joseph B(ernard), *Physical chemistry.* Kansas City, Mo, 1/6/15; m. 43, c. 2. B.S, Rockhurst Col, 37; Ph.D, Indiana, 42. Dow Chem. Co, 42-.

CABLE, Raymond M(illard), *Zoology.* Campton, Ky, 4/22/09. A.B, Berea Col, 29; Ph.D, N. Y. U, 33. Purdue, 35-, prof, 47-. Trematodes.

CADOGAN, W(illiam) P(atrick), *Chemical engineering.* Revere, Mass, 11/2/19; m. 43, c. 2. S.B, Mass. Inst. Tech, 41, Sc.D, 48. Standard Oil Co. Ind, 48-.

CADY, William E(dward), *Chemistry.* Williamsport, Pa, 5/21/20; m. 43, c. 1. B.S, Pa. State Col, 42. Standard Oil Co. Ind, 46-.

CAGE, John M(artin), *Electrical engineering.* Stephenville, Tex, 12/23/09; m. 35, c. 1. B.S, Iowa State Col, 31, E.E, 40. Purdue, prof, 47-.

CAIN, Stanley A(dair), *Botany.* Jefferson Co., Ind, 6/19/02; m. 40, c. 1. B.S, Butler, 24; M.S, Chicago, 27, Ph.D, 30. Butler, 25-31, assoc. prof, 30-31; Indiana, asst. prof, 31-35; Cranbrook Inst. Sci, 46-50; Michigan, 50-. Plant sociology and geography.

CALDWELL, A(rchie) Lee, *Chemistry.* Doniphan, Mo, 10/10/01; m. 25, c. 2. Ph.G, Phila. Col. Phar, 21, Ph.D, 22. Eli Lilly & Co, 25-, head nutrition and vitamin res. dept, 39-.

CALDWELL, C(lyde) T(rain), *Physiological chemistry.* Fairmount, Ind, 11/11/97; m. 23, c. 1. B.S, Earlham Col, 22; Ph.D, Illinois, 32. Standard Oil Co. Ind, 23-24; Earlham, 24-30, asst. prof, 25-30; Upjohn Co, 33-.

CALDWELL, M(arion) J(ohn), *Biochemistry.* Indianapolis, Ind, 9/14/08; m. 33, c. 4. B.S, Kans. State Col, 31, M.S, 33, Ph.D, 36. Kans. State Col, 32-42; Moorman Co, 47-.

CALDWELL, Otis W(illiam), *Botany* (starred). Lebanon, Ind, 12/18/69, died, 47. B.S, Franklin Col, 94; Ph.D, Chicago, 98. Chicago, prof, 07-17; Columbia, Teachers Col, prof, 17-35; Am. Assn. Adv. Sci, gen. sec, 35-47.

CALDWELL, Ralph M(errill), *Phytopathology.* Brookings, S. Dak, 6/27/03; m. B.S, S. Dak. State Col, 25; M.S, Wisconsin, 27, Ph.D, 29. Purdue, assoc. bot, exp. sta, 30-37, ch, dept. bot. and plant path, 37-.

CALKINS, Gary N(athan), *Zoology* (starred). Valparaiso, Ind, 1/18/69, died, 43. B.S, Mass. Inst. Tech, 90; Ph.D, Columbia, 98. Columbia, 99-43, prof, 04-07, protozool, 07-43. Natl. Acad. Sci; Soc. Exp. Biol. (pres, 19-21); Soc. Cancer Res. (pres, 16). General cytology; protozoa.

CALL, R(ichard) Ellsworth, *Zoology.* Brooklyn, N. Y, 5/13/56, died, 17. A.B, Indiana, 90, A.M, 91; M.D, Hosp. Col. Med, Louisville, Ky, 93; Ph.D, Ohio (Athens), 95. Supt. schs, Lawrenceburg, Ind, 95-98; N. Y. C. high schs, 98-17.

CALLAGHAN, Eugene, *Economic geology.* Snohomish, Wash, 1/10/04; m. 35, c. 2. A.B, Oregon, 26, A.M, 27; Ph.D, Columbia, 31. U. S. Geol. Surv, 30-45; Indiana, prof, 46-49.

CALLAHAN, Ethel B(eatrice), *Mathematics.* Binghamton, N. Y, 6/19/90. A.B, Cornell, 12; M.A, Wisconsin, 23; Ph.D, Columbia, 41. St. Mary's Col. (Ind.), assoc. prof, 34-42.

CALLAWAY, J(ack) B(eniah), *Organic chemistry.* Ind, 3/4/10; m. 37, c. 3. A.B, Cincinnati, 32, A.M, 33, Ph.D, 36. Dupont Co, 36-.

CALVERT, George Isaac, *Metallurgy.* South Bend, Ind, 7/5/10; m. 37, c. 2. B.S, Purdue, 34. Ross Gear & Tool Co. (Ind.), 34-35; Carnegie-Ill. Steel Corp, 35-37; U. S. Army, Ordnance Dept, 46-. Alloys.

CAMERON, Angus L., *Surgery.* Hamilton, Ind, 2/10/91; m. 15, 41, c. 5. A.B, Indiana, 13; M.S, Chicago, 14; M.D, Rush, 16; Ph.D, Minnesota, 21. Northwest Clinic (Minot, N. Dak.), 28-.

CAMERON, Edwin J(ohn), *Bacteriology.* Cambridge, Mass, 9/17/95. B.S, Mass. Inst. Tech, 20; Ph.D, Geo. Washington, 27. Commercial Solvents Corp. (Terre Haute), 20-23; Natl. Canners Assn, res. dir, 39-.

CAMPAIGNE, E(rnest) E(dwin), *Chemistry.* Chicago, Ill, 2/13/14; m. 41, c. 2. B.S, Northwestern, 36, M.S, 38, Ph.D, 40. Indiana, 43-, assoc. prof, 49-.

CAMPAU, Edward J(unior), *Entomology.* Alto, Mich, 7/5/16. B.S, Mich, State Col, 38; M.A, Stanford, 40; Ph.D, Wisconsin, 42. Standard Oil Co. Ind, fungicides group leader, 46-.

CAMPBELL, (Albert) Angus, *Psychology.* Leiters, Ind, 8/10/10; m. 40, c. 2. B.A, Oregon, M.A, 32; Ph.D, Stanford, 36. Michigan, 46-, dir. res. center, 49-.

CAMPBELL, A(rthur) W(illiam), *Organic chemistry.* Lexington, Ore, 4/24/99; m. 26, c. 2. A.B, Oregon, 22; M.S, Iowa, 25, Ph.D, 27. Commercial Solvents Corp. (Terre Haute), 43-.

CAMPBELL, Barbara K(napp), *Organic chemistry.* Denver, Colo, 6/14/08; m. 33. B.S, Chicago, 29, M.S, 31; Illinois, 36; Ph.D, Pa. State Col, 37. Notre Dame, res. assoc, 37-44; Indiana, lect, 45-.

CAMPBELL, C(larence) G(ordon), *Eugenics.* Marshfield, Ind, 4/28/68. Wabash Col, 83-86, hon. LL.D, 26; Ph.B, Michigan, 88; M.D, Bellevue, 99. Racial studies, Orient and Pacific Islands, 02-14. Eugenics Res. Assn. (pres, 27-). Racial anthropology; social philosophy.

CAMPBELL, Dan H(ampton), *Immunochemistry.* Fremont, O, 08; m. 30, c. 1. A.B, Wabash Col, 30; M.S, Washington (St. Louis), 33; Ph.D, Chicago, 35. Chicago, 38-42, asst. prof, 39-42; Calif. Inst. Tech, 42-, assoc. prof, 45-.

CAMPBELL, D(ouglas) H(oughton), *Botany* (starred). Detroit, Mich, 12/16/59. Ph.M, Michigan, 82, Ph.D, 86. Indiana, prof, 88-91; Stanford, prof, 91-25. Natl. Acad. Sci; Am. Assn. Adv. Sci. (v.p, 02); Soc. Nat; Bot. Soc. (pres, 13); Philos. Soc. Comparative morphology; phytogeography.

CAMPBELL, Edw(ard) D(onald), *Biochemistry.* Kokomo, Ind, 3/4/95; m. 39, c. 1. A.B, Butler, 22; Ph.D, Chicago, 24. Eli Lilly & Co, 25-. Hormones and enzymes; pernicious anemia.

CAMPBELL, Elmer Grant, *Botany.* Fairburn, Ga, 2/11/76; m. 04, c. 1. A.B, Hiram Col, 05; M.S, Purdue, 14; Ph.D, Chicago, 23. Ind. high schs, 09-12; Purdue, 12-27, prof, 18-27. Plant ecology and pathology.

CAMPBELL, Ivor S(t. Clair), *Electrical engineering.* Kearny, N. J, 7/4/95; m. 18, c. 4. B.S.(C.E.), Ohio Northern, 16, B.S.(E.E.), 17, M.E, 23; M.Sc, Ohio State, 29. Sunbeam Elec. Mfg. Co. (Evansville), 36-42.

CAMPBELL, John Lyle, *Physics, Astronomy.* Salem, Ind, 10/13/27, died, 04. A.B, Wabash Col, 49, A.M, 52; LL.D, Indiana, 76. Wabash Col, prof, 50-95; U. S. Coast & Geodetic Surv, 81-89. Ind. Acad. Sci. (pres, 92).

CAMPBELL, Kenneth N(ielsen), *Organic chemistry.* Hillsdale, Mich, 5/31/05; m. 33. B.S, Chicago, 28, Ph.D, 32. Notre Dame, 36-, prof, 45-.

CAMPBELL, Malcolm (Alan), *Psychology.* Peru, Ind, 6/7/05. A.B, Reed Col, 28; A.M, Oregon, 30; Ph.D, Stanford, 34. N. Y. U, instr, 33-.

CAMPBELL, Wanda L. Daggett, *Chemistry.* Dayton, Ore, 5/28/00; m, c. 2. B.A, Oregon, 22. Wabash River Ordnance Works, U. S. Army, ch. govt. chem, 42-45; Merchants Distilling Corp. (Terre Haute), 45-.

CANDY, A(lbert) L(uther), *Mathematics.* Jonesboro, Ind, 3/12/57, died, 35. A.B, Kansas, 92, A.M, 93; Ph.D, Nebraska, 98. Nebraska, prof, 93-35.

CANFIELD, Donald T(reat), *Electrical engineering.* Brooklyn, N. Y, 9/25/95; m. 21, c. 2. B.S, Worcester Poly. Inst, 20, E.E, 35; M.S, Purdue, 24. Purdue, 21-, prof, 40-. Energy measurement.

CAPARO, Jose Angel, *Mathematics, Electrical engineering.* Cuzco, Peru, S. A, 11/2/88, nat, 39; m. 31, c. 2. C.E, Notre Dame, 08, M.C.E, E.E, 09, M.S, 11, M.E, Ph.D, 13; A.M, Chicago, 19. Notre Dame, 08-, prof. elec. eng, 19-.

CAPPS, Stephen R(eid), *Geology.* Jacksonville, Ill, 10/15/81, died, 49; m. 11, c. 4. A.B, Chicago, 03, Ph.D, 07. U. S. Geol. Surv, 07-49. Expert on Alaska. Author of 200 pp. U. S. G. S. report on groundwater of Northern Indiana, 1910. (Starred.)

CARLANDER, Kenneth Dixon, *Zoology.* Gary, Ind, 5/25/15; m. 39. B.A, Minnesota, 36, M.S, 38, Ph.D, 43. Iowa State Col, 46-, assoc. prof, 48-.

CARLIN, (Mary Agnes) Frances, *Food chemistry.* Springfield, Mass, 8/21/06. B.S, Columbia, 31, M.A, 33; M.S, Cornell, 43; Ph.D, Iowa State Col, 47. St. Mary-of-the-Woods Col, 34-38.

CARLISLE, Paul M., *Chemistry.* Shelbyville, Ind, 3/21/87; m. 15, c. 1. A.B, Indiana, 13, A.M, 14. Brown Smith Battery Co. (Ind.), 10-14; Dupont Co, 16-.

CARLSTON, Charles W(illiam), *Geology.* Kokomo, Ind, 7/15/12; m. 40, c. 1. B.S, Washington (Seattle), 36; Ph.D, Columbia, 46. U. S. Geol. Surv, 40-.

CARMACK, Marvin, *Organic chemistry.* Newport, Ind, 9/1/13. A.B, Illinois, 37; M.S, Michigan, 39, Ph.D, 40. Pennsylvania, assoc. prof, 46-.

CARMAN, Albert P(ruden), *Physics* (starred). Woodbury, N. J, 7/15/61, died, 46. A.B, Princeton, 83, A.M, 85, Sc.D, 86. Purdue, prof, 90-93; Illinois, prof, 96-29. Electricity, magnetism.

CARMAN, Katharine W(oodley), *Geology.* N. Y. C, 1/1/06. A.B, Wellesley Col, 27; Ph.D, Mass. Inst. Tech, 33. Great Lakes Carbon Corp. (Ind.), dist. geol, 43-46; Buckhorn Oil Co. (Evansville), partner, 46-.

CARMICHAEL, R(obert) D(aniel), *Mathematics* (starred). Goodwater, Ala, 3/1/79; m. 01, c. 4. A.B, Lineville, 98; Ph.D, Princeton, 11. Indiana, 11-15; assoc. prof, 12-15; Illinois, head dept, 29-34, dean grad sch, 33-34.

CARMODY, D(on) R(ichard), *Physical organic chemistry.* Davenport, Ia, 9/20/12; m. 40, c. 1. B.S, St. Ambrose Col, 34; M.S, Iowa, 36, Ph.D, 37. Standard Oil Co. Ind, 37-43.

CARNEY, Thomas P(atrick), *Organic chemistry.* DuBois, Pa, 5/27/15; m. 42, c. 1. B.S, Notre Dame, 37; M.S, Pa. State Col, 39, Ph.D, 41. Eli Lilly & Co, 44-.

CARPENTER, Gene Blakley, *Chemistry.* Evansville, Ind, 12/15/22. B.A, Louisville, 41; M.A, Harvard, 45, Ph.D, 47. Calif. Inst. Tech, natl. res. fellow, 48-.

CARPENTER, John M(elvin) *Zoology.* Terre Haute, Ind, 5/21/10; m. 46, c. 1. B.A, Texas, 36, M.A, 40, Ph.D, 46. Tennessee, asst. prof, 46-.

CARPENTER, Morris T., *Chemical engineering.* Glen Ridge, N. J, 8/9/09; m. 38, c. 2. B.S, Kentucky, 30. Standard Oil Co. Ind, 30-, exec. dir. labs, 38-.

CARR, R(alph) H(oward), *Agricultural chemistry.* Wooster, O, 8/28/78. B.S, Col. Wooster, 00; M.S, Wisconsin, 10, Ph.D, 13. Purdue, prof, 13-43.

CARRICK, C(arey) W(alton), *Poultry husbandry.* Lexington, N. C, 7/6/93. A.B, Wake Forest Col, 15, A.M, 16; M.S.A, Cornell, 17. Purdue, 18-, assoc, exp. sta, 21-26, prof, 26-, head dept, 26-40.

CARRICK, L(eo) L(ehr), *Chemistry.* Platteville, Wis, 2/5/89; m. 11. B.S, Valparaiso, 08, A.B, 09, M.S, 11; A.M, Indiana, 15, Ph.D, 22. Ind. high schs, 11-14; Prest-O-Lite Battery Co. (Ind.), 15-17; Michigan, prof, 44-.

CARSCALLEN, George E(rnest), *Mathematics.* Frankfort, Ind, 8/29/81; m. 11, c. 1. A.B, Wabash Col, 06; A.M, Illinois, 10. Wabash Col, asst. prof. to assoc. prof, 20-.

CARSWELL, T(homas) S(myth), *Chemistry.* Wilmington, Del, 1/9/97; m. 26. B.S, Delaware, 18. Commercial Solvents Corp. (Terre Haute), 46-.

CARTER, A(ltice) S(idney), *Agricultural chemistry.* Chandler, Ind, 7/15/00; m. 30, c. 1. B.S.A, Purdue, 23; M.S, Illinois, 27. Ind. high schs, 23-25; Agr. agent, Ind. counties, 26-30; Purdue, 41-, assoc. prof, 46-.

CARTER, Edgar B(rock), *Bacteriology.* Elkinsville, Ind, 4/22/86; m. 14, 22, c. 2. A.B, Indiana, 11. Swan-Myers (Ind.), dir. biol. lab, 15-30; Abbott Labs, dir. res, 46-. Immunology; bacteriophage; pollen.

CARTER, Gerald C(layton), *Psychology.* Henryville, Ind, 3/21/15; m. 36, c. 1. A.B, DePauw, 34; M.A, Ind. State Teachers Col, 39; Ph.D, Purdue, 44. Illinois, 45-, asst. prof, 46-.

CARTER, H(erbert) E(dmund), *Chemistry.* Mooresville, Ind, 9/25/10; m. 33, c. 2. A.B, DePauw, 30; A.M, Illinois, 31, Ph.D, 34. Illinois, 37-, prof, 45-.

CARTER, J(ames) Cedric, *Botany.* Wingate, Ind, 10/25/05; m. 34, c. 1. B.S.A, Purdue, 28, M.S, 32, Ph.D, 34. Ill. State Surv, 34-.

CARTER, J(ames) Hal, *Physical chemistry.* Maury City, Tenn, 5/21/05; m. 30, c. 2. A.B, Union (Tenn.), 25; M.S, Vanderbilt, 27; Ph.D, Iowa State Col, 31. Purdue, assoc. prof, 48-.

CARTER, Jerry W(illiams), Jr, *Clinical psychology.* Canton, N. C, 10/2/08; m. 38, c. 3. A.B.E, Florida, 32; A.M, Indiana, 34, Ph.D, 38. Indiana, exten. lect, 37-40; U. S. Pub. Health Serv, 49-.

CARTER, Richard (Pence), *Chemical engineering.* Alderson, W. Va, 1/3/15; m. 39, c. 3. B.S, Va. Poly. Inst, 36; Ph.D, Purdue, 40. Hercules Powder Co, 40-.

CARTWRIGHT, C. Hawley, *Physics.* Huntington, Ind, 8/27/04; m. 40, c. 1. B.S, Calif. Inst. Tech, 26, Ph.D, 30. Corning Glass Works, 40-. Gases in glass.

CARVAJAL, Fernando, *Mycology*. San Jose, Costa Rica, 6/4/13, nat, 45; m. 41, c. 3. B.S, Costa Rica, 38; M.S, Cornell, 42; Ph.D, Louisiana, 43. Schenley Res. Labs. (Ind.), 44-.

CASE, George Wilkinson, *Engineering*. Fowler, Ind, 3/2/80. B.S, Purdue, 05; M.C.E, Cornell, 12. Purdue, asst. prof, 07-13; New Hampshire, dean col. tech. and dir. exp. sta, 25-40.

CASSELL, Raymond Kelly, *Geography*. Denver, Colo, 1/6/05, died, 50; m. 40, c. 1. A.B, Michigan, 38, A.M, 39, Ph.D, 46. Indiana, 46-50, asst. prof, 49-50.

CASTLE, Gordon B(enjamin), *Zoology*. Portland, Ind, 8/10/06; m. 31, c. 2. A.B, Wabash Col, 28; A.M, California, 30, Ph.D, 34. Montana, 36-, prof, 39-49, dean col. arts and sci, 49-.

CASTON, Ralph H(enry), *Physics*. Akron, O, 11/22/15; m. 46, c. 1. M.S, Akron, 39; Ph.D, Notre Dame, 42. Kimberly-Clark Corp, 45-.

CATHCART, W(illiam) H., *Physical chemistry*. Bloomington, Ind, 6/15/11; m. 35. c. 2. A.B, Indiana, 33, A.M, 34; Ph.D, N. Y. U, 36. Great A. & P. Tea Co, dir. bakeries lab, 41-.

CAUDELL, A(ndrew) N(elson), *Entomology*. Indianapolis, Ind, 8/18/72, died, 36. B.S, Okla. Col, 97. U. S. Natl. Museum, custodian Orthoptera, 98-36.

CAVANAUGH, Robert Morris, *Chemistry*. Terre Haute, Ind, 7/20/14; m. 38, c. 1. A.B, Indiana, 33, M.A, 34; Ph.D, Yale, 37. Dupont Co, 37-, res. sect. head, 41-.

CAVETT, J(esse) W(illiam), *Physiological chemistry*. Kent, Ind, 3/6/00; m. 24, c. 3. A.B, Hanover Col, 21; A.M, Indiana, 24; Ph.D, Iowa, 30. Iowa, Dr. Salsbury's Labs, 37-. Helminth metabolism.

CERVENY, William J(ames), *Chemical engineering*. Chicago, Ill, 3/12/13; m. 37, c. 2. B.S, Pittsburgh, 43. Standard Oil Co. Ind, 47-.

CHAMBERS, Othniel R(obert), *Psychology*. Jasper, Ind, 4/19/94; m. 19, c. 2. A.B, A.M, Indiana, 22; Ph.D, Ohio State, 26. Ore. State Col, prof, 29-.

CHAMBERS, William T(rout), *Geography*. Oaktown, Ind, 11/14/96; m. 27, c. 4. A.B, Ind. State Teachers Col, 21; B.S, Chicago, 24, Ph.D, 26. State Teachers Col, Tex, 26-, head dept, 30-.

CHANDLER, Ray C(alvin), *Plant physiology, Chemistry*. Odon, Ind, 7/10/95; m. 30. B.S, California, 30, M.S, 34, Ph.D, 37. Chico State Col. (Calif.), assoc. prof, 47-.

CHANIN, Martin, *Chemistry*. Newark, N. J, 1/24/22; m. 46, c. 1. B.A, Pennsylvania, 42; Ph.D, Michigan, 46. Evansville Col, asst. prof, 47-.

CHAO, Tsai H(siang), *Organic chemistry*. Canton, China, 9/15/12; m. 39, c. 2. B.S, Indiana, 35, A.M, 36; Ph.D, Purdue, 40. Am. Cyanamid Co, Calco Chem. Div, 40-.

CHAPMAN, Dwight W(estley), Jr, *Psychology, Statistics*. South Bend, Ind, 6/4/05; m. 42, c. 2. A.B, Harvard, 27, Ph.D, 30. Howard, instr, 30-36.

CHAPMAN, Edgar Kincaid, *Physics*. Huntley, Ill, 12/28/77, died, 28. A.B, Oberlin Col, 03; Sc.M, Chicago, 10. Wabash Col, prof, 10-28.

CHAPMAN, Kenneth M(ilton), *Archeology*. Ligonier, Ind, 7/13/75; m. 15, c. 2. Sch. Am. Res, 09-29; New Mexico, 26-45, prof, 42-45. Indian Art.

CHARLTON, O(rlando) C(larke), *Botany*. Pleasant, Ind, 4/2/54. B.S, Hanover Col, 72, A.M, 85. Ind. pub. schs, 76-85; Baylor, 93-02.

CHASE, Ethel W. B., *Plant ecology*. La Porte, Ind, 12/19/77. A.B, Michigan, 03, A.M, 15. Wayne, 33-47.

CHEN, K(o) K(uei), *Pharmacology*. Shanghai, China, 2/26/98; m. B.S, Wisconsin, 20, Ph.D, 23; M.D, Hopkins, 27. Eli Lilly & Co, 29-; Indiana, sch. med. prof, 37-. Vasoconstrictors; heart drugs; Chinese herbs.

CHENOWETH, W(alter) W(infred), *Horticulture*. Jamesport, Mo, 5/30/71, died, 45. B.S, Valparaiso, 02, A.B, 03, M.S, 07. Mass. Col, prof. pomol, 12-45.

CHEVALIER, Paul Louis, *Dentistry*. Indianapolis, Ind, 11/17/99; m. 24, c. 2. D.D.S, Indiana, 22. Med. Col. Va, prof, 27-46.

CHEYNE, Virgil D(wight), *Oral histology, Pathology*. Webster City, Ia, 11/17/08; m. 31, c. 3. D.D.S, Iowa, 33; A.B, Rochester, 38, Ph.D, 40. Indiana, prof, sch. dent, 40-43.

CHITTUM, Joseph F(rederick), *Chemistry*. Wapello, Ia, 11/28/02; m. 28, c. 4. B.S, Iowa Wesleyan Col, 24; Ph.D, Chicago, 28. Purdue, 28-38, asst. prof, 34-38.

CHRISMAN, Oscar, *Paidology*. Gosport, Ind, 11/16/55, died, 29. A.B, Indiana, 88, A.M, 93; Ph.D, Jena, 96. Ind. schs, 76-83; Ohio (Athens), head dept, 02-29. Uncivilized child.

CHRIST, J(ohn) H(enry), *Agronomy*. Bluffton, Ind, 11/21/96; m. 21, c. 2. B.S, Idaho, 19; M.S, Iowa State Col, 20. U. S. Soil Cons. Serv, 36-, regional conservator, 38-. Re-seeding burned-over lands.

CHRISTENSEN, Leo M(artin), *Chemistry*. Dow City, Ia, 11/5/98. B.S, Iowa State Col, 23, Ph.D, 26. Commercial Solvents Corp, 26-31; U. S. chemurgy proj. (Nebr.), res. exec, 41-.

CHRISTIAN, John E(dward), *Pharmaceutical chemistry.* Indianapolis, Ind, 7/12/17. B.S, Purdue, 39, Ph.D, 44. Purdue, 45-, assoc. prof, 47-.

CHRISTIE, G(eorge) I(rving), *Agronomy.* Winchester, Ont, 6/22/81. B.S.A, Toronto, 02. Purdue, 05-28, supt. agr. exten, 09-28, dir. exp. sta, 20-28; Ontario Agr. Col, pres, 28-. Ind. Corn Growers Assn. (sec, 06-28). Seed corn; farming in Indiana.

CHRISTY, O(tto) B., *Biology.* Riley, Ind, 12/15/83; m. 18. B.S, Illinois, 16; M.S, Cornell, 23; Ph.D, Peabody Col, 36. Ind. schs, 03-13; Ind. State Nor. Sch, instr, 13-16; Ball State Teachers Col, prof, 18-, head dept, 31-. Ind. Acad. Sci. (v.p, 50).

CHUPP, Charles, *Plant pathology.* Millersburg, Ind, 6/2/86; m. 13, c. 4. A.B, Wabash Col, 12; Ph.D, Cornell, 16. Cornell, prof, 27-.

CHURCHILL, John W(ilbur), *Chemistry.* Hillsdale, Pa, 7/20/12; m. 40, c. 3. B.S, Akron, 26; M.S, Oberlin Col, 37; Ph.D, Purdue, 44. Mathieson Chem. Corp, 41-, asst. dir. res, 49-.

CHURCHILL, Ruel V(ance), *Mathematics.* Akron, Ind, 12/12/99; m. 22, c. 2. B.S, Chicago, 22; M.S, Michigan, 25, Ph.D, 29. Michigan, 22-, assoc. prof, 38-42, prof, 42-.

CIBORSKI, John Michael, *Metallurgy.* N. Y. C, 2/2/15; m. 40, c. 2. B.S, Purdue, 39; M.S, Harvard, 40. Purdue, instr, 42-43; Natl. Lead Co, 43-.

CISLAK, F(rancis) E(dward), *Organic chemistry.* Chicago, Ill, 10/3/05; m. B.S, Chicago, 25, M.S, 26; Ph.D, Northwestern, 29. Reilly Tar & Chem. Corp. (Indianapolis), 29-, dir. res, 37-.

CISSEL, James H(arlan), *Structural engineering.* Goodland, Kans. 6/24/89, died, 49. B.S, Purdue, 10. Michigan, 15-49, prof, 28-49.

CLAPP, John T., *Chemical engineering.* Beech Grove, Ind, 8/29/12. B.S, Purdue, 33; M.S, Illinois, 40, Ph.D, 42. P. R. Mallory & Co. (Indianapolis), 33-38; Standard Oil Co. Ind, 42-45.

CLARK, Alfred, *Physical chemistry.* Beverly, Mass, 8/5/09. B.S, Purdue, 30; M.S, Mich. State Col, 32; Ph.D, Illinois, 35. Battelle Mem. Inst, res. eng, 37-.

CLARK, Arnold F(ranklin), *Nuclear physics.* Madison, Wis, 4/27/16. A.B, Swarthmore Col, 37; A.M, Indiana, 39, Ph.D, 41. Rochester, 46-, asst. prof, 47-.

CLARK, C(ecil) P(ratt), *Ophthalmology.* Goodland, Ind, 6/2/94; m. 24, c. 2. B.S, Indiana, 17, M.D, 19. Indiana, 25-, clin. prof, 46-. Albinism.

CLARK, Charles E(rwin), *Mathematics.* Rochester, N. Y, 1/23/10; m. 40, c. 2. A.B, Rochester, 30; Sc.M, Brown, 33; Ph.D, Cornell, 38. Purdue, prof, 39-43.

CLARK, David Seeger, *Mechanical engineering.* Cincinnati, O, 2/27/99; m. 27, c. 3. B.S, Purdue, 25, M.S, 36. Purdue, to prof, 25-.

CLARK, E(dward) L(ester), *Psychology.* White Hall, Ill, 9/25/95. A.B, DePauw, 20; A.M, Northwestern, 22, Ph.D, 25. Northwestern, 22-, assoc. prof, 30-.

CLARK, George L(indenberg), *Chemistry* (starred). Anderson, Ind, 9/6/92; m. 19, c. 5. A.B, DePauw, 14; M.S, Chicago, 14, Ph.D. (physics), 18. DePauw, instr, 14-16; Illinois, 27-, prof. and head anal. div, 28-.

CLARK, Herbert C(harles), *Medicine.* Economy, Ind, 11/11/77; m. 11, c. 1. Hon. D.Sc, Earlham Col, 46; M.D, Pennsylvania, 06. Bd. Health Lab. (Ancon, C. Z.), path, 09-22; Gorgas Mem. Lab. (Panama), dir, 29-.

CLARK, H(oward) Walton, *Zoology.* Allen Co, Ind, 9/9/70, died, 41. A.B, Indiana, 96, A.M, 01. U. S. Bur. Fisheries, 04-09; Iowa, U. S. biol. sta, 10-41. Mussels.

CLARK, John R(ay), *Electrical engineering.* Chester, W. Va, 5/4/18. B.S, Purdue, 39, M.S.E, 41. Purdue, 41-, asst. prof, 46-.

CLARK, John R(oscoe), *Mathematics.* Bloomfield, Ind, 8/18/87. A.B, Indiana, 12; Ph.D, Columbia, 25. Columbia, Teachers Col, 19-.

CLARK, John R(oscoe), Jr, *Color cinematography.* Owensburg, Ind, 8/18/15; m. 41, c. 4. A.B, Columbia, 34. Technicolor Motion Picture Corp, res, 36-.

CLARK, Robert Kingsbury, Jr, *Biochemistry.* Peoria, Ill, 3/18/22. A.B, DePauw, 43; Ph.D, Illinois, 48. Abbott Labs, 48-.

CLARK, S(herman) W(ood), *Entomology.* West Lafayette, Ind, 11/14/03; m. 26, c. 2. B.S, Purdue, 27. Texas, exp. sta, 28-38; Texas Gulf Sulphur Co, 38-.

CLARK, Wilber Lewis, *Food chemistry.* Thorntown, Ind, 8/18/88; m. 14, c. 3. B.A, Wabash Col, 10. Ind. high schs, 12-18; Van Camp's Co. (Ind.), 18-28; Van Camp's-Stokeley Co. (Ind.), 31-38; Van Camp Milk Co, 39-44. Vitamins.

CLARKE, Elbert H(oward), *Mathematics.* Edinburg, Ind, 3/15/87; m. 10, c. 5. A.B, Butler, 09; Ph.D, Chicago, 22. Purdue, instr, 10-16; Hiram Col, prof, 17-.

CLARKE, Herbert M(orris), *Botany.* Rensselaer, Ind, 12/15/09. A.B, Franklin Col, 31; M.S, Wisconsin, 33, Ph.D, 35. Wisconsin, 46-, asst. prof, 47-. Lycopodium.

CLARKE, Ira D(oup), *Chemistry.* Edinburg, Ind, 11/1/90; m. 21, c. 2. A.B, Butler, 12. U. S. Dept. Agr, 17-41.

CLARKE, J(oy) Harold, *Horticulture.* Lafayette, Ind, 6/12/99. B.S.A, Purdue, 21; M.S, Delaware, 23; Ph.D, Columbia, 42. N.J, exp. sta, 23-25, assoc. pomol, 25-.

CLAYTON, Mary M(orris), *Nutrition.* Shelbyville, Ind, 9/4/93. B.S, Columbia, 18; M.S, Rochester, 25, Ph.D, 28. Maine, exp. sta, 34-.

CLELAND, Ralph E(rskine), *Botany* (starred), *Genetics.* Le Claire, Ia, 10/20/92; m. 27, c. 3. A.B, Pennsylvania, 15, M.S, 16, Ph.D, 19. Indiana, prof, 38-. Natl. Acad. Sci; Bot. Soc. (pres, 47); Soc. Nat. (pres, 42). Cytology; genetics; Oenothera.

CLEMENTS, Leo P(aul), *Embryology, Histology.* Daviess Co, Ind, 8/21/89; m. 17, 47, c. 7. A.B, Ind. State Nor. Sch, 20; M.S, Iowa State Col, 26; Ph.D, Chicago, 35. Ind. schs, 12-20; Ind. State Teachers Col, asst. prof, 21-28; Creighton, asst. prof. anat, 29-38, assoc. prof, 38-.

CLEVELAND, C(larence) R(ugg), *Entomology.* Seward, Ill, 8/27/89; m. 12, c. 3. A.B, Wisconsin, 12. Purdue, exp. sta, 21-27, asst. prof, 25-27; Standard Oil Co. Ind, 27-, ch. entom, 48-. Tree and household insect control.

CLIFFORD, George (Orr), *Mechanical engineering.* Evansville, Ind, 1/15/97; m. 23, c. 2. A.B, Wabash Col, 19; B.S, Mass. Inst. Tech, 22. Evansville Tool Works, from supt. to pres, 24-36.

CLIFT, C(ecil) W(illiam), *Agronomy.* Patoka, Ind, m. 37, c. 3. B.S.A, Purdue, 35; M.S, Illinois, 43. U. S. Dept. Agr. (Ind.), 38-40.

CLOGSTON, C(harles) C(urtis), *Chemistry.* Bloomfield, Ind, 10/21/98; m. 23, c. 1. B.S, Purdue, 22. Underwriters' Labs, Inc, 23-.

CLOUD, J(ohn) H(ofer), *Physics.* Clinton, Ill, 71. B.S, North. Ind. Nor. Sch, 93; A.B, Valparaiso, 96; Chicago, 97; A.M, Hopkins, 18; Ph.D, Indiana, 22. Valparaiso, prof, 97-20; Okla. A. & M. Col, prof, 20-44.

CLOWES, George H(enry) A(lexander), *Chemistry* (starred). Ipswich, Eng, 8/27/77, nat, 21; m. 10, c. 2. Ph.D, Gottingen, 99, Sc.D, Butler, 32; LL.D, Wabash Col, 38. Eli Lilly & Co, 19-46, dir. res, 21-46. Penicillin.

CLUTE, Willard N(elson), *Botany.* Painted Post, N. Y, 2/27/69. Butler, instr. biol. and dir. bot. gardens, 28-38; Holliday Park Bot. Garden (Indianapolis), dir, 38-. Ed, *Am. Botanist,* 01-. Ferns.

COCHRAN, L(loyd) C(urtis), *Plant pathology.* Frankfort, Ind, 4/5/06; m. 33, c. 2. B.S.A, Purdue, 28; M.S, Mich. State Col, 30, Ph.D, 36. California, exp. sta, 36-44.

COCKERILLE, F(rank) O('Neil), *Chemistry.* La Plata, Md, 5/12/06. B.S, Michigan, 27; Ph.D, Hopkins, 32. Reilly Tar & Chem. Co. (Ind.), res. chem, 31-34; Dupont Rayon Co, 34-.

COFFEY, Joel S(immonds), *Animal husbandry.* Rugby, Ind, 12/8/85; m. 22. c. 2. B.S, Illinois, 12. Purdue, instr, 12-14; Ohio State, prof, 18-.

COFFEY, Joseph F(rancis), *Chemical engineering.* E. St. Louis, Ill, 6/6/17; m. 44, c. 2. B.S, Mass. Inst. Tech, 39, M.S, 42. Standard Oil Co. Ind, 42-.

COFFEY, W(alter) C(astella), *Animal husbandry.* Hartsville, Ind, 2/1/76. B.S, Illinois, 06, M.S, 09; D.Sc, Franklin Col, 43. Minnesota, dean dept. agr, 21-41, pres, 41-45. Sheep husbandry.

COFFIN, T(homas) E(rwin), *Psychology.* Richmond, Ind, 1/30/16. A.B, Whittier Col, 36; A.M, Princeton, 39, Ph.D, 41. Hofstra Col, asst. prof, 39-.

COFFMAN, Alden W(illiams), *Chemistry.* Lagrange, Ind, 10/3/99. B.S, Illinois, 22, M.S, 23, Ph.D, 27. H. H. Robertson Co, 39-.

COGGESHALL, L(owell) T(helwell), *Tropical medicine.* Saratoga, Ind, 5/7/01; m. 30, c. 3. A.B, Indiana, 22, A.M, 23, M.D, 28. Indiana, instr. anat, 26-27; Chicago, 31-, asst. prof, 33-35, chm. dept. med. and dean div. biol. sci, 46-. Lobar pneumonia; malaria.

COGSHALL, W(ilbur) A(delman), *Astronomy.* Mendon, Mich, 2/8/74. B.S, Albion Col, 95. Indiana, 00-43, prof, 23-43. Ind. Acad. Sci. (pres, 16).

COHEE, George V(incent), *Petroleum geology.* Indianapolis, Ind, 2/4/07; m. 30. B.S, Illinois, 31, M.S, 32, Ph.D, 37. Asst. state geol, Ind, 42-43; U. S. Geol. Surv, sr. geol, 47-.

COHEE, R(olland) F., Jr, *Food chemistry.* Frankfort, Ind, 7/26/10; m. 38, c. 2. B.S, Purdue, 32; M.S, State Col. Wash, 34. Corn Prods. Sales Co. (Chicago), 38-.

COHEN, Leonard, *Psychology.* Pittsburgh, Pa, 6/19/22; m. 42, c. 2. B.A, Clark, 43; M.S, Pittsburgh, 45; D.S.Sc, New Sch. Soc. Res, 48. Purdue, exten. (Indianapolis Center), prof, 48-.

COHEN, Seymour J(erome), *Pharmacology, Physiology.* South Bend, Ind, 1/7/96, died, 42. B.S, M.S, Chicago, 17; M.D, Rush, 19.

COLBY, Frank G(erhardt), *Chemistry.* Muhlhasen, Germany, 4/10/15. Chem. eng, Geneva, 39, D.Sc, 41. Commercial Solvents Corp. (Terre Haute), 47-.

COLE, Arthur W(illiams), *Mechanical engineering.* Worcester, Mass, 2/17/75, died, 48. B.S, Worcester Poly. Inst, 02, M.E, 07. Purdue, prof, 06-42. Ind. steam coal.

COLE, (John) Wayne, *Organic chemistry.* Indianapolis, Ind, 11/5/15; m. 36, c. 3. A.B, DePauw, 35; A.M, Illinois, 36, Ph.D, 38. Glidden Co, 39-, asst. dir. res, 46-.

COLE, Lamont C(ook), *Zoology.* Chicago, Ill, 7/15/16; m. 40, c. 1. S.B, Chicago, 38, Ph.D, 44; M.S, Utah, 40. Indiana, instr, 46-48; Cornell, asst. prof, 48-.

COLE, Luella (Mrs. Robert Lowie), *Education.* Haverhill, Mass, 4/1/93; m. 18, 33. A.B, Vassar Col, 16; M.A, Indiana, 20, Ph.D, 22. Ohio State, instr. to assoc. prof, 21-31.

COLE, Richard W(illiam), *Electronics.* Lagrange, Ind, 12/16/13; m. 40, c. 2. B.S, Mich. State Col, 41; M.S, Hopkins, 48. Hopkins, 46-. Guided missiles.

COLE, Versa V(iola), *Pharmacology.* Constantine, Mich, 3/5/06. A.B, Kalamazoo Col, 27, M.S, 28; Ph.D, Chicago, 31, M.D, 38. Indiana, 43-, assoc. prof, 44-.

COLEMAN, Charles F(ranklin), *Chemistry.* Burley, Idaho, 12/30/17. B.S, Utah, 41; M.S, Purdue, 43, Ph.D, 48. Oak Ridge Lab, 44-.

COLES, Harold W(illiam), *Organic chemistry.* East Liverpool, O, 7/25/98; m. 27, c. 3. B.S, Syracuse, 23; M.S, Iowa State Col, 26, Ph.D, 27. Eli Lilly & Co, 27-33; Mellon Inst. Indust, 33-.

COLEY, J(ohn) R(obinson), *Chemical engineering.* Westport, Conn, 8/18/15. B.S, Ga. Inst. Tech, 37, M.S, 39; Ph.D, Ill. Inst. Tech, 48. Standard Oil Co. Ind, 47-.

COLLETT, A(rmand) Rene, *Chemistry.* Hartford City, Ind, 2/3/95; m. 22, c. 3. A.B, West Virginia, 18; Ph.D, Yale, 23. W. Va, 26-, prof, 39-.

COLLETT, John, *Geology.* Eugene, Ind, 1/6/28, died, 99. A.B, Wabash Col, 47, A.M, 50, Ph.D, 79. Asst. state geol, Ind, 70-78, state geol, 81-85. Published 6 vols. geol. reports on Ind, 110 papers, 22 maps.

COLLIER, Mary Elizabeth, *Psychology.* Paris, Ont, Can, 4/10/20; m. 47. B.A, Queen's (Can.), 42; A.M, Radcliffe Col, 43; Ph.D, Minnesota, 46. Indiana, 47-, asst. prof, 48-.

COLLINGS, W(illiam) Doyne, *Biology.* Rockville, Ind, 10/11/13; m. 41, c. 2. A.B, DePauw, 35; A.M, Princeton, 37, Ph.D, 38. Mich. State Col, assoc. prof, 49-.

COLLINS, George (Briggs), *Physics.* Washington, D. C, 1/3/06; m. 34, c. 3. Ph.D, Hopkins, 31. Notre Dame, instr, 33-41; Rochester, prof, 46-.

COLLINS, H(enry) H(omer), *Biology.* Kewanee, Ind, 12/10/85, died, 37. B.S, California, 15, A.M, 16, Ph.D, 19. Pittsburgh, prof, 20-37.

COLLINS, J(acob) R(oland), *Physics.* Byesville, O, 3/28/91, died, 48. B.S, Ohio, 12; M.S, Purdue, 14; Ph.D, Cornell, 21. Purdue, instr, 14-18; Cornell, 21-48, prof, 38-48.

COLLINS, J(ulius) L(loyd), *Genetics.* Kewanna, Ind, 2/16/89; m. 19, c. 1. B.S, California, 18, Ph.D, 23. Assn. Hawaiian Pineapple Canners Exp. Sta, 30-.

COLLINS, W(illiam) D(ennis), *Chemistry.* Malden, Mass, 9/4/75; m. 07. A.B, Harvard, 95, A.M, 97. Earlham Col, prof, 97-06; U.S. Dept. Agr, 08-20; U.S. Geol. Surv, 20-46.

COMAR, C(yril) L(ewis), *Agricultural chemistry.* Dudley, Eng, 3/28/14, nat, 41; m. 39, c. 2. B.S, California, 36; Ph.D, Purdue, 41. Atomic Energy Comn, 48-.

COMPTON, Walter Ames, *Medicine.* Elkhart, Ind, 4/22/11; m. 35, c. 5. A.B, Princeton, 33; M.D, Harvard, 37. Miles Labs. (Elkhart), med. and res. dir, 38-46, pres, 46-.

CONDIKE, George F(rancis), *Chemistry.* Brockton, Mass, 12/1/16; m. 41, c. 1. A.B, DePauw, 40; Ph.D, Cornell, 43. Mass. State Teachers Col, 47-.

CONKLIN, Edmund Smith, *Psychology.* New Britain, Conn, 4/19/84, died, 42; m. 15, c. 2. M.A, Clark, 09, Ph.D, 11. Oregon, prof, 11-34; Indiana, prof, 34-42. Author of 4 texts.

CONKLIN, Raymond I., *Animal pathology.* Norwich, N. Y, 6/8/95; m. 17, c. 3. D.V.M, Cornell, 17; M.Sc, McGill, 23, M.D, C.M, 38. Miles Labs. (Ind.), 41-, med. and res. dir, 45-.

CONLON, Joseph W., *Chemical engineering.* Binghamton, N. Y, 12/14/11; m. 40, c. 3. B.S, Notre Dame, 35. Gen. Aniline & Film Corp, 36-.

CONNER, Samuel D., *Chemistry.* Ind, 72, died, 36. B.S, Purdue, 94, M.S, 07. Purdue, exp. sta, 04-36.

CONSOLATA, Sister Maria (Voss), C.S.C. *Physics, Chemistry.* Leetonia, O, 1/1/97. B.A, St. Mary's Col. (Ind.), 20, M.A, 21; Ph.D, Notre Dame, 45; M.S, Illinois, 38. St. Mary's Col. 26-, assoc. prof. phys, 40-46, prof. chem, 46-.

CONSTANTINIDES, Philip A., *Physics.* Athens, Greece, 9/25/96, nat, 27; m. 36. B.S, Carnegie Inst. Tech, 18; M.S, Chicago, 21, Ph.D, 27. Gary Jr. Col, prof, 32-48.

CONWAY, Herbert, *Plastic surgery.* Ft. Wayne, Ind, 6/25/04; m. 36, c. 2. M.B, Cincinnati, 28, M.D, B.S, 29, M.S, 32. Cornell, 32-, assoc. prof, 45-.

CONWAY, Hertsell S., *Analytical chemistry*. Peoria, Ill, 9/30/14; m. S.B, Chicago, 32, Ph.D, 37. Standard Oil Co. Ind, 47-.

COOK, C(larence) Sharp, *Physics*. St. Louis Crossing, Ind, 8/18/18; m. 43, c. 2. A.B, DePauw, 40; M.A, Indiana, 42, Ph.D, 48.

COOK, Donald Jack, *Organic chemistry*. Rock Island, Ill, 2/12/15; m. 39, c. 1. A.B, Augustana Col, 37; M.A, Illinois, 38, Ph.D, Indiana, 44. DePauw, asst. prof, 45-; Commercial Solvents Corp. (Ind.), 47-.

COOK, Harold T(hurston), *Plant pathology*. Greencastle, Ind, 11/15/03; m. 28, c. 2 A.B, DePauw, 26; Ph.D, Cornell, 31. U.S. Dept. Agr, 48-.

COOK, Mel(ville) T(hurston), *Plant pathology* (starred). Coffeen, Ill, 9/20/69; m. 97, c. 3. A.B, Stanford, 94; A.M, DePauw, 01; Ph.D, Ohio State, 04. DePauw, 95-04, prof, 97-04; Rutgers, prof, 11-23; Insular Exp. Sta. (Rio Piedras), 23-40.

COOK, Rolla V(ergil), *Physical science*. New Lancaster, Ind, 2/22/91. A.B, Indiana, 21, A.M, 22, Ph.D, 31. Bethany Col, 23-33; Va. Poly. Inst, 46-.

COOLEY, J(ames) A(vas), *Mathematics*. Scottsburg, Ind, 11/3/01; m. 30, c. 2. A.B, Indiana, 28, A.M, 29; Ph.D, Illinois, 35. Ind. high schs, 22-27; Tennessee, 38-, prof, 39-.

COOMBS, E(dward) A(rthur), *Physics*. Louisville, Ky, 6/27/09; m. 40, c. 3. B.S, Notre Dame, 31, M.S, 33; Sc.D, Mass. Inst. Tech, 38. Notre Dame, 38-, prof, 45-.

COON, James H(untington), *Physics*. Liberty, Mo, 11/9/15. A.B, Indiana, 37; Ph.D, Chicago, 42. Los Alamos Labs. (N. Mex.), 43-.

COON, Julius M(osher), *Pharmacology*. Liberty, Mo, 10/29/10; m. 47. A.B, Indiana, 32; Ph.D, Chicago, 38; M.D, Illinois, 45. Chicago, assoc. prof, 47-, dir. toxicity lab, 48-.

COONS, (Charles) Curtis, *Chemistry*. Upland, Ind, 9/12/00; m. 29, c. 1. B.S, Illinois, 24, M.S, 26, Ph.D, 28. Hoover Co, 33-.

COOP, Jesse J(ames), *Physics*. Peytonsburg, Ky, 9/2/02; m. 30, c. 1. A.B, Berea Col, 28; M.S, Kentucky, 30; Ph.D, Indiana, 36.

COOPER, Byron Nelson, *Geology*. Plainfield, Ind, 8/19/12; m. 35, c. 1. A.B, DePauw, 34; M.S, Iowa, 35, Ph.D, 37. Va. Poly. Inst, prof, 46-.

COOPER, D(elmer) C(lair), *Cytology*. Sutherland, Ia, 4/10/96; m. 33, c. 3. B.A, Morningside Col, 16; M.S, Purdue, 26; Ph.D, Wisconsin, 30. Purdue, instr, 26-28; Wisconsin, 42-, prof. genetics, 47-.

COOPER, Douglas E(lhoff), *Organic chemistry*. New Boston, O, 5/21/12. B.S, East Ky. State Teachers Col, 39; M.S, Tennessee, 40; Ph.D, Purdue, 43. Bristol Labs, 43-.

COOPER, Herschel H(arber), *Geology*. Huntingburg, Ind, 7/13/94. B.S, State Col. Wash, 21, M.S, 22. Cons. geol, 28-.

COOPER, Joseph Bonar, *Psychology*. Indianapolis, Ind, 12/10/12; m. 46, c. 2. A.B, California L. A, 36, Ph.D, 40. San Jose State Col, 40-.

COOPER, Robert H(oliday), *Entomology, Biology*. Cadiz, Ind, 8/9/01; m. 30. B.S, Ball State Col, 29; M.S, Iowa State Col, 35, Ph.D, 39. Ind. high schs, 30-36; Ball State Teachers Col, assoc. prof, 36-.

COOVER, J(ohn) E(dgar), *Psychology*. Remington, Ind, 3/16/72, died, 38. A.B, Stanford, 04, A.M, 05, Ph.D, 12. Stanford, asst. prof, 14-37.

COPE, Arthur C(lay), *Chemistry* (starred). Dunreith, Ind, 6/27/09; m. 30. B.S, Butler, 29; Ph.D, Wisconsin, 32. Harvard, 32-34; Columbia, 41-44; Mass. Inst. Tech, head dept, 45-. Natl. Acad. Sci. Synthetic organic chemistry.

COPELAND, Clem A(ustin), *Electrical engineering*. Goshen, Ind, 7/21/70; died, 44. A.B, Cornell, 96. Stanford, assoc. prof, 98-01; Bur. Power and Light, Los Angeles, hydro-elec. res, 16-40.

COPELAND, Joseph J(ohn), *Botany*. Marion, Ind, 8/27/07; m, c. 2. A.B, Earlham Col, 29; Ph.D, Columbia, 36. Col. City N.Y, instr, 38-.

CORBELL, Louis M(anen), *Aeronautical engineering*. Glendale, Calif, 6/18/22; m. 47. B.S, Purdue, 47, M.S, 48. Pan-Am. Airways, 48-.

CORDES, Walter J(ohn), *Chemical engineering*. Leland, Mich, 10/20/18; m. 43, c. 1. B.S, Notre Dame, 42. Dupont Co, 42-.

CORLEY, Ralph C(onner), *Biochemistry*. Tower Hill, Ill, 6/5/01; m. 24, c. 3. A.B, Illinois, 21, A.M, 22, Ph.D, 24. Purdue, 30-, prof, 35-.

CORNELIUS, David W(illiam), *Physics*. Linton, Ind, 4/28/85, died, 42. A.B, DePauw, 06; Ph.D, Illinois, 12. Purdue, 06-08; Chattanooga, prof, 20-.

CORNTHWAITE, W(illiam) R(obert), *Chemistry*. Elwood, Ind, 11/5/02; m. 29, c. 2. A.B, DePauw, 23; A.M, Ohio State, 25, Ph.D, 27. Dupont Co, 36-, Vinyl prods. div, 45-.

CORRELL, Malcolm, *Physics*. Linton, Ind, 5/3/14; m. 38, c. 3. A.B, Indiana, 35; Ph.D, Chicago, 48. Indiana, instr, 40-42; Okla A. & M. Col, prof, 48-.

CORSE, Joseph (Walters), *Chemistry.* Denver, Colo, 9/7/13; m. 36, c. 3. B.A, California L. A, 36; Ph.D, Illinois, 40. Eli Lilly & Co, 40-46.

CORTELYOU, W(arren) P(ratt), *Analytical chemistry.* Oblong, Ill, 3/28/08; m. B.S, Illinois, 29; Ph.D, Iowa, 37. Valparaiso, asst. prof, 41-45; Roosevelt Col, chm. dept, 45-.

CORTEZ, Samuel H(ensley), *Physics.* Ogden, Ut, 6/15/04; m. 31, c. 3. A.B, Utah, 30, A.M, 31; Ph.D, Indiana, 33. Fullerton Jr. Col, 34-.

CORUM, Cyril J(oseph), *Plant physiology.* Louisville, Ky, 12/21/14; m. 38. A.B, Miami (O.), 36; Ph.D, Wisconsin, 40. Commercial Solvents Corp. (Ind), 47-.

CORY, C(larence) L(inus), *Engineering.* Lafayette, Ind, 9/4/72, died, 37. B.M.E, Purdue, 89; M.M.E, Cornell, 91. Purdue, 89-90; California, 92-37, dean col. mech, 01-37.

CORY, H(arry) T(homas), *Hydraulics.* Montmorenci, Ind, 5/27/70; m. 11, c. 1. B.M.E, Purdue, 87, B.C.E, 89, hon. D.E, 29; M.C.E, Cornell, 93, M.M.E, 96. Missouri, prof, 93-00; diverted Colo. River from Salton Sea, 06-07; cons. eng, Calif, 09-35; U.S. Soil Cons. Serv, 35-40.

CORYELL, H(orace) N(oble), *Paleontology.* North Vernon, Ind, 2/13/88; m, c. 1. A.B, Indiana, 14, A.M, 15; Ph.D, Chicago, 19. Ind. Geol. Surv, 10-14; Columbia, 19-, assoc, 35-.

COSGROVE, John F(rancis), *Bacteriology.* Newark, N. J, 1/27/05. B.S, Notre Dame, 29. Rutgers, 30-47.

COTTON, William J(acobs), *Chemistry.* Bailunda, W. Cent. Africa, 4/21/90; m. 18, c. 2. B.A, Ripon Col, 10; M.S, Wisconsin, 11. Butler, instr, 14-16; Natl. Aniline & Chem. Co, 19-34; Monsanto Chem. Co, 34-40; Pa. Coal Prods. Co, res. dir, 40-47.

COULTER, John M(erle), *Botany* (starred). Ningpo, China, 11/20/51, died, 28; m. 74, c. 3. A.B, Hanover Col, 70; Ph.D, Indiana, 82, LL.D, 20. Hayden Surv, botanist, 72-74; Hanover, prof, 74-79; Wabash Col, prof, 79-91; Indiana, pres, 91-93; Winona (Ind.) summer sch, prin, 95-98; Chicago, prof, 96-25. Natl. Acad. Sci; Bot. Soc. (pres, 97-15); Am. Assn. Univ. Profs. (pres, 18); Ind. Acad. Sci. (pres, 86). Taxonomy, morphology of seed plants; author of 12 textbooks; a leader in science in Indiana 74-93.

COULTER, Stanley, *Botany* (starred). Ningpo, China, 6/2/53, died, 43; m. 77, c. 1. A.M, Hanover Col, 77, Ph.D, 89; hon. Sc.D, Purdue, 31. Purdue, dir. biol. lab, 87-26, dean sch. sci, 05-26. Ind. Acad. Sci. (active member for 55 yrs; pres, 96). Flora of Indiana; forest trees of Indiana; nature study. Bd. Foresters Ind, 02-16; mem. state cons. comn, 16-33; Ind. Audubon Soc. (pres, 4 yrs.); author *Catalog of Plants of Indiana,* 99, and numerous pamphlets and articles. Leader in Indiana science for a half century.

COVERT, William V(annuys), *Mechanical engineering.* Indianapolis, Ind, 10/15/13; m. 42, c. 2. B.S, Purdue, 34. Diamond Chain Co, sr. eng. res, 46-.

COWEN, Frank M., *Organic chemistry.* Mogadore, O, 10/17/20; m. 46. B.A, Ohio Wesleyan, 42; Ph.D, Purdue, 47. Am. Cyanamid Co, 47-.

COWLES, Henry Chandler, *Botany* (starred). Kensington, Conn, 2/27/69, died, 39; m. 00, c. 1. A.B, Oberlin, 93; Ph.D, Chicago, 98. Chicago, instr. to prof, 02-34. Assn. Am. Geogs. (pres, 10); Ecol. Soc. Am. (pres, 18); Bot. Soc. Am. (pres, 22). *Vegetation of the Sand Dunes of Lake Michigan* (largely northern Indiana), a pioneer ecological study, greatly stimulated other such studies, especially of plant succession. Did much field work in northern Indiana for 20 years.

COWLING, Hale, *Chemistry.* Clarksville, Pa, 6/26/10; m. 35, c. 2. A.B, DePauw, 32; M.S, Michigan, 34, Ph.D, 40. Am. Viscose Corp, 41-.

COX, C(lare) F(rancis), *Botany.* Hudson, Ill, 3/9/88; m. c. 1. A.B, Illinois, 17; Ph.D, Chicago, 31. Arsenal Tech. High Sch. (Indianapolis), teacher, 17-.

COX, Edward H(ill), *Organic chemistry.* Richmond, Ind, 5/3/92. A.B, Earlham Col, 14; M.A, Harvard, 20; D.Sc, Geneva Col, 22. Swarthmore Col, 26-, prof, 35-, head dept, 49-.

COX, Elbert F(rank), *Mathematics.* Evansville, Ind, 12/5/95; m. 27, c. 3. A.B, Indiana, 17; Ph.D, Cornell, 25. Howard, assoc. prof, 29-47, prof, 47-.

COX, E(dward) T(ravers), *Geology.* Virginia, 1821. State geol, Ind, 69-80; Indiana, prof.

COX, Herald R(ea), *Bacteriology.* Rosedale, Ind, 2/28/07; m. 32, c. 3. A.B, Ind. State Teachers Col, 28; Sc.D, Hopkins, 31. U.S. Pub. Health Serv, 36-42, prin. bact, 40-42; Lederle Labs, dir, 44-. Rickettsial diseases.

COX, Martha, *Physics.* Chappaqua, N. Y, 10/23/08. A.B, Cornell, 29; A.M, Bryn Mawr Col, 36, Ph.D, 42. U.S. Naval Ordnance Plant (Indianapolis), 45-, head phys, 49-.

COX, Norman L(ouis), *Chemistry.* Crawfordsville, Ind, 2/19/07; m. 35. A.B, Wabash Col, 30; Ph.D, Brown, 34. Wabash Col, instr, 34-35; Dupont Co. Exp. Sta, 35-.

COX, Paul E(rnest), *Ceramics.* Crawfordsville, Ind, 2/8/79; m. 18. B.S, Alfred, 05. Iowa State Col, head dept, 20-39.

COX, Ulysses O(range), *Biology.* Farmland, Ind, 9/29/64, died, 20. A.B, Indiana, 00, A.M, 02. Ind. State Nor. Sch, 05-20.

COX, Warren M(urdock), Jr, *Biochemistry.* Columbus, Miss, 9/21/02; m. 27, c. 4. B.S, Davidson Col, 24; Ph.D, Hopkins, 31. Mead Johnson & Co, 32-, dir. nutritional res, 44-.

CRAGWALL, Gordon O(wen), *Chemistry.* Rutledge, Tenn, 6/9/93; m. 22, c. 2. A.B, Wabash Col, 13. Chas. Pfizer & Co, 29-.

CRAIG, Cecil C(alvert), *Mathematics.* Otwell, Ind, 4/14/98; m. 27, c. 1. A.B, Indiana, 20, A.M, 22; Ph.D, Michigan, 27. Indiana, instr, 20-22; Michigan, 31-, prof, 42-, dir. statist. res. lab, 46-.

CRAIGE, A(rthur) Henry, Jr, *Veterinary medicine.* Philadelphia, Pa, 11/16/09; m. 34, c. 2. V.M.D, Pennsylvania, 32. Pitman-Moore Co. (Ind.), 41-45; Smith Kline & French Labs, 48-.

CRANE, John C(asner), *Biochemistry.* Solsberry, Ind, 3/13/07. B.S, Illinois, 28, M.S, 33; Ph.D, Purdue, 41. Standard Brands, 41-.

CRAWFORD, Lawrence C., *Civil engineering.* Bentonville, Ind, 12/17/06; m. 32, c. 2. B.S, Purdue, 30. Iowa, assoc. dir. inst. hydraulic res, 40-.

CRAWFORD, W(iley) W(illiam), *Zoology.* Visalia, Calif, 12/3/99; m. 25, c. 1. A.B, Missouri, 25, A.M, 28; Ph.D, Minnesota, 34. Wabash Col, asst. prof, 28-32; Evansville Col, prof, 47-.

CRAWLEY, S(umner) L(ee), *Psychology.* Hebbardsville, Ky, 6/17/01; m. 26, c. 1. A.B, Indiana, 22; A.M, Columbia, 23, Ph.D, 26. Indiana, asst. prof, 26-29; Colo. State Col. Educ, prof, 39-47; Utah, chm. dept, 49-.

CREEL, Cecil W(illis), *Entomology.* Angola, Ind, 10/22/89; m. 45, c. 3. B.S, Nevada, 11. Nevada, dir. agr. exten, 21-42, dean sch. agr, 45-.

CREPPS, Ray B(urnell), *Civil engineering.* South Bend, Ind; m. 14, c. 2. B.S, Purdue, 16, M.S, 21. Purdue, assoc. prof, 18-43.

CRILLEY, R(aymond) E(arl), *Astronomy.* Oakland City, Ind, 5/10/05. A.B, Oakland City Col, 26; A.M, Iowa, 34. Iowa Wesleyan Col, 30-, prof, 34-. Byrd Antarctic exped, 33-35.

CRITES, James E(dward), *Physics.* Granbury, Tex, 11/1/90; m. 20, c. 2. B.S, State Col. Wash, 16; M.A, Columbia, 23; Ph.D, Indiana, 37. Owens-Ill. Glass Co, 48-.

CROG, Richard Stanley, *Chemistry.* Minneapolis, Minn, 8/4/15; m. 40, c. 3. B.S, Col. St. Thomas, 37; M.S, Purdue, 40, Ph.D, 42. Union Oil Co. Calif, 41-.

CROMER, Orville C(harles), *Mechanical engineering.* Savanna, Ill, 8/23/95; m. 25, c. 1. B.S, Wisconsin, 30, M.S, 31, M.E, 38. Purdue, 42-, assoc. prof, 44-.

CROMWELL, Hobart W(illiam), *Bacteriology, Immunology.* Clay Co, Ind, 12/31/95; m, c. 2. A.B, Ind. State Nor. Sch, 17; Sc.D, Hopkins, 22. Swan-Myers Co. (Indianapolis), 29-31; Abbott Labs, 31-, mgr. microbiol. res. dept, 46-.

CROMWELL, Norman H(enry), *Organic chemistry.* Terre Haute, Ind, 11/22/13; m. 39. B.S, Rose Poly. Inst, 35; Ph.D, Minnesota, 39. Nebraska, 39-, prof, 49-.

CROOKS, Donald M(undell), *Botany.* Cicero, Ind, 10/10/02; m. 24, c. 2. B.S, Ball State Teachers Col, 27; M.S, Chicago, 29, Ph.D, 33. Ind. high schs, 21-29; Ball State Teachers Col, asst. prof, 29-35; U.S. Dept. Agr, hort, 41-.

CROSTHWAIT, D(avid) N(elson), Jr, *Mechanical engineering.* Nashville, Tenn, 5/27/92; m. 41. B.S, Purdue, 13, M.E, 20. C. A, Dunham Co. (Mich. City, Ind.), 13-, dir. res. lab, 25-30, tech. adv, 30-.

CROWDER, T(homas) R(eid), *Medicine.* Sullivan, Ind, 2/6/72, died, 42. Ph.B, DePauw, 94; M.D, Rush, 97. Cook Co. Hosp, 97-99; Pullman Co, med. dir, 05-42.

CROWE, Lawrence K(enneth), *Dairy husbandry.* Richmond, Ind, 10/10/98; m. 24, c. 2. B.S, Colo. State Col, 22; M.S, Nebraska, 25; Ph.D, Minnesota, 47. Nebraska, 25-, prof, 47-.

CROWELL, Sears, *Zoology.* Natick, Mass, 5/2/09; m. 38, c. 3. A.B, Bowdoin Col, 30; A.M, Harvard, 31, Ph.D, 35. Indiana, asst. prof, 48-.

CROXALL, Willard (Joseph), *Chemistry.* Aberdeen, Wash, 11/11/10; m. 32, c. 4. B.S, Notre Dame, 32, M.S, 33, Ph.D, 35. Rohm & Haas Co, 36-, res. lab. head, 46-.

CROXTON, Frank C(utshaw), *Chemistry.* Washington, D.C, 6/26/07. A.B, Ohio State, 27, A.M, 28, Ph.D, 30. Standard Oil Co. Ind, 30-39; Battelle Mem. Inst, 39-.

CROZIER, R(onald) G(ilpin), *Organic chemistry.* Hanover, Ind, 8/20/03. B.S, Beloit Col, 26; M.S, Wisconsin, 28. Abbott Labs, 34-.

CROZIER, William D(wight), *Acoustics.* North Liberty, Ia, 5/24/00; m. 35. B.E, Iowa, 23, M.S, 24, Ph.D, 27. Rose Poly. Inst, 36-42; New Mexico, res. phys, 42-46.

CRULL, Harry E(dward), *Mathematics, Astronomy.* Chicago, Ill, 2/7/09; m. 32, c. 3. A.B, Illinois, 30, A.M, 31, Ph.D, 33. Butler, head dept, 47-.

CRUMP, Clifford C(harles), *Astronomy.* Kewanna, Ind, 10/11/91. B.S, Earlham Col, 12; A.M, Michigan, 13, Ph.D, 16. Perkins Observ, asst. dir, 17-29; Chicago, assoc. prof, 30-33; Ripon Col, prof, 36-.

CUBBERLEY, Ellwood P., *Education.* Andrews, Ind, 6/6/68, died, 41; m. 92. A.B, Indiana, 91; A.M, Columbia, 02, Ph.D, 05. Vincennes, 91-96, pres, 93-96; Stanford, 98-33, dean sch. educ, 17-33. Author of many texts.

CUFFEY, James, *Astronomy.* Chicago, Ill, 10/8/11; m. 38, c. 3. B.S, Northwestern, 34; A.M, Harvard, 36, Ph.D, 38. Indiana, 39-, asst. prof, 46-.

CULBERTSON, Glenn, *Naturalist.* Switzerland Co, Ind, 2/3/63, died, 27. A.B, Hanover Col, 88, M.A, 91. Hanover, prof. physics and geol, 93-27. Ind. Acad. Sci. (pres, 08). For 30 years measured retreat of Clifty Falls. Archeological survey of Jefferson County, Ind.

CULBERTSON, Clyde Gray, *Pathology.* Vevay, Ind, 7/27/06; m. 31. B.S, Indiana, 28, M.D, 31. Indiana, 31-, asst. prof, 33-42, prof. clin. path, 34-; Cent. State Hosp, dir. cent. lab, 31-46; Eli Lilly & Co, asst. dir. biol. div, 46-.

CULBERTSON, John Archer, *Geophysics.* Hanover, Ind, 8/29/00; m. 25. B.A, Hanover Col, 21; M.S, Chicago, 24; Ph.D, Illinois, 32. Continental Oil Co, 33-, ch. geol, 48-.

CULBERTSON, J(ulian) L., *Physical chemistry.* Moorefield, Ind, 10/9/95; m. 20, c. 2. A.B, Hanover Col, 17; A.M, Indiana, 18; Sc.D, Michigan, 33. State Col. Wash, prof, 20-.

CULLINAN, F(rank) P., *Pomology.* Geneva, N. Y, 9/28/95. B.S, Cornell, 17; Ph.D, Chicago, 31. Purdue, 17-31, assoc. prof, 19-31; U. S. Dept. Agr, 31-.

CUMINGS, E(dgar) R(oscoe), *Geology, Paleontology.* North Madison, O, 2/20/74; m. 05, c. 2. A.B, Union Col. (N. Y.), 97; Ph.D, Yale, 03. Indiana, 98-44, prof, 09-44, head dept, 03-42. Ind. Acad. Sci. (pres, 25). Ancient Indiana coral reefs; Indiana geology.

CUMMINS, George B(aker), *Mycology.* Tecumseh, Nebr, 8/29/04; m. 30, c. 2. B.S, Mont. State Col, 27; A.M, Michigan, 28; Ph.D, Purdue, 35. Purdue, 31-, prof, 47-. Tomatoes.

CUMMINS, Harold, *Anatomy.* Markleville, Ind, 5/28/93; m. 18, c. 3. A.B, Michigan, 16; Ph.D, Tulane, 25. Tulane, 19-, prof, 32-.

CUNNINGHAM, G(eoffrey) E(verett), *Chemistry.* Hazleton, Ind, 1/15/99 B.S, Tulane, 23, M.S, 25; Ph.D, Rice Inst, 28. Dollinger Corp, tech. dir, 42-.

CUNNINGHAM, O(mer) C(ole), *Dairy husbandry.* Switzerland Co, Ind, 4/15/82; m. 08, c. 1. B.S, Purdue, 06. N. Mex. Col, prof, 18-48.

CURRAN, Brother Columba (William Joseph Curran), *Physical chemistry.* Cincinnati, O, 4/8/11. B.S, Notre Dame, 33, M.S, 35, Ph.D, 37. Notre Dame, 37-, assoc. prof, 43-.

CURRIE, James N(imrod), *Chemistry.* Jasonville, Ind, 10/21/83; m, c. 2. A.B, Indiana, 08, A.M, 09, LL.D, 31; Ph.D, Wisconsin, 12. Chas. Pfizer & Co, 17-48.

CUSIC, John Willis, *Chemistry.* Allerton, Ill, 8/8/08; m. 36, c. 2. A.B, DePauw, 31; M.S, Illinois, 32. G. D. Searle & Co. (Chicago), 36-.

CUTLER, G(arnet) H(omer), *Agronomy.* Arkona, Ont. Can, 6/12/82, nat, 32; m. 11, c. 3. B.S.A, Toronto, 09; M.S, Wisconsin, 25, Ph.D, 28. Purdue, prof. soils, 26-.

CUTSHALL, C(hester) S(herman), *Mechanics.* Ft. Wayne, Ind, 5/24/96; m. 20, c. 2. B.S, Purdue, 19, M.S, 24. Eli Lilly & Co, 19-20; Purdue, 20-, prof, 41-.

CWALINA, Gustav E(dward), *Pharmaceutical chemistry.* Baltimore, Md, 2/6/09; m. 43, c. 2. B.S, Maryland, 31, M.S, 33, Ph.D, 37. Purdue, asst. prof, 46-.

CYR, Gilman N(orman), *Pharmacy.* Van Buren, Me, 2/14/23; m. 45, c. 2. B.S, Mass. Col. Phar, 43, M.S, 47; Ph.D, Purdue, 49.

DAGGY, Tom, *Biology.* Mooresville, Ind, 7/16/15; m. 39, c. 2. B.A, Earlham Col, 37; M.S, Northwestern, 39, Ph.D, 46. Davidson Col, prof, 47-.

DAILY, Mrs. Fay Kenoyer, *Botany.* Indianapolis, Ind, 2/17/11; m. 37. A.B, Butler, 35. Eli Lilly & Co, 35-37; Butler, lect, 47-.

DAILY, William A(llen), *Microbiology.* Indianapolis, Ind, 11/10/12; m. 37. B.S, Butler, 36; M.S, Northwestern, 38. Eli Lilly & Co, 41-. Antibiotics; Myxophyceae; taxonomy.

DALE, Clark H(all), *Chemistry.* Rochester, N. Y, 6/6/07; m. 31, c. 4. B.S, Rochester, 29, M.S, 34, Ph.D, 36. Standard Oil Co. Ind, 47-.

DALE, Julian K(alfus), *Chemistry.* Lexington, Ky, 4/13/89; m. 14, c. 1. A.B, Princeton, 11, A.M, 13, Ph.D, 14. Commercial Solvents Corp. (Terre Haute), 37-. Vitamins; antibiotics.

DAMON, S(amuel) Reed, *Bacteriology.* Lancaster, Mass, 6/27/93; m. 21, c. 2. Ph.B, Brown, 16, A.M, 17, Ph.D, 21. State Health Dept, Ind, dir. labs, 46-; Indiana, lect, 46-.

DANEHY, James P(hilip), *Organic chemistry.* Ft. Wayne, Ind, 4/27/12; m. 34, c. 3. B.S, Notre Dame, 33, M.S, 34, Ph.D, 36. Toni Co, 48-.

DANFORTH, Joseph D(avis), *Petroleum chemistry.* Danville, Ill, 3/7/12; m. 40, c. 3. A.B, Wabash Col, 34; Ph.D, Purdue, 38. Grinnell Col, assoc. prof, 47-.

DANGLADE, Ernest, *Icthyology.* Vevay, Ind, 12/17/65, died, 32. A.B, Buchtell Col, 89. U. S. Bur. Fisheries, 08-16; supt. schs, Vevay, 16-32.

DANIEL, Robert S(trongman), *Psychology.* Pikeville, Ky, 1/2/14; m. 40, c. 2. A.B, DePauw, 36; A.M, Indiana, 38, Ph.D, 41. Indiana, instr, 40-42; Missouri, 45-, assoc. prof, 47-.

DANIELS, T(roy) C(ook), *Pharmaceutical chemistry.* Worth, Mo, 8/27/99; m. 29, c. 2. B.S, Michigan, 23; Ph.D, Indiana, 29. California, col. phar, 29-, prof, 33-, dean, 44-.

DANIELSON, Gordon C(harles), *Physics.* Dover, Idaho, 10/28/12; m. 39, c. 2. B.A, British Columbia, 33, M.A, 35; Ph.D, Purdue, 40. Iowa State Col, assoc. prof, 46-.

DANTZIG, Tobias, *Mathematics.* Shavli, Russia, 2/19/84. Licencie, Paris, 09; Ph.D, Indiana, 17. Indiana, instr, 15-18; Maryland, 26-46, prof, 36-46, chm. dept, 38-46.

DANZIG, Meyer H(illel), *Chemistry.* Detroit, Mich, 8/6/18; m. 41, c. 1. B.S, Wayne, 39, M.S, 41; Ph.D, Purdue, 44. Glenn L. Martin Co, res, 47-.

DART, S(idney) Leonard, *Physics.* Cape Town, S. Africa, 8/24/18; m. 42, c. 3. A.B, Oberlin Col, 40; M.S, Notre Dame, 43, Ph.D, 46. Notre Dame, 43-46, res. assoc, 44-46; Am. Viscose Corp, 46-.

DASHER, P(aul) J(ames), *Chemistry.* Pleasant Plains, Ill, 6/4/12. B.S, Illinois, 34; A.M, Indiana, 35, Ph.D, 37. B. F. Goodrich Co, 37-, dir. fuel cell div, 41-.

DASHIELL, J(ohn) F(rederick), *Psychology* (starred). Southport, Ind, 4/30/88; m. 12, c. 2. B.S, Evansville Col, 08, Litt.B, 09, hon. Sc.D, 49; Ph.D, Columbia, 13. Evansville Col, instr, 08-09; North Carolina, prof, 20-35, Kenan prof, 35-. Experimental methods in legal and social psychology.

DATA, John B(atiste), *Pharmaceutical chemistry.* Novinger, Mo, 11/6/08; m. 40, c. 2. B.S, Michigan, 38, M.S, 38, Ph.D, 41. Purdue, assoc. prof, 48-.

DAUBENMIRE, Rexford F., *Botany.* Coldwater, O, 12/12/09; m. 38. B.S, Butler, 30; M.S, Colorado, 32; Ph.D, Minnesota, 35. State Col. Wash, assoc. prof, 46-.

DAUGHERTY, F(ord), C(urtis), *Animal nutrition.* Battle Ground, Ind. B.S.A, Purdue, 25, M.S.A, 32. Connecticut, assoc. prof, 41-.

DAUGHERTY, M(aurice) W(illiam), *Metallurgy.* Indianapolis, Ind, 7/1/99; m. 25, c. 1. B.S, Purdue, 23. Aluminum Co. Am, 45-, ch. res, 49-.

DAUGHERTY, Robert L(ong), *Mechanical engineering.* Indianapolis, Ind, 9/14/85; m. 10, 32, c. 1. A.B, Stanford, 09; M.E, 14. Calif. Inst. Tech, prof, 19-.

DAVENPORT, Charles H(enry), *Chemical engineering.* Revelstoke, B.C, Can, 4/2/16; m. 45, c. 1. B.A.Sc, British Columbia, 38, M.A.Sc, 39; Sc.D, Mass. Inst. Tech, 42. Swift & Co. (Ind.), plant food div, ch, res, 44-48.

DAVIDSON, R(obert) L(ayman), *Chemical engineering.* Anderson, Ind, 3/5/05; m. 30, c. 2. A.B, DePauw, 26; M.S, Mass. Inst. Tech, 28. Armco Steel Corp, 40-.

DAVIES, Earl C(laudius) H(amilton), *Physical chemistry.* Delaware, O, 1/13/89; m. 17, c. 3. A.B, Ohio Wesleyan, 10, A.M, 11; Ph.D, Chicago, 17. Butler, head dept, 18-20; West Virginia, 20-, prof, 31-.

DAVIES, John A(rchibald), V, *Pediatrics.* Ft. Wayne, Ind, 11/7/96; m. 40, c. 3. A.B, Princeton, 19; B.A, Oxford, 23 (Rhodes scholar); M.D, Hopkins, 24; M.S, Yale, 26. Harvard, med. sch, 37-, asst. clin. prof, 48-. Meningitis, syphilis.

DAVIS, Ardith P(aul), *Physical chemistry.* Foresman, Ind, 10/18/04. A.B, DePauw, 26; Ph.D, Cornell, 33. Notre Dame, res. assoc, 41-.

DAVIS, B(enjamin) H(arold), *Plant pathology.* Lafayette, Ind, 1/25/05; m. 33, c. 2. A.B, Wabash Col, 28; Ph.D, Cornell, 34. Rutgers, assoc. prof, 39-.

DAVIS, B(enjamin) M(arshall), *Physiology, Education.* North Salem, Ind, 6/15/67. B.S, Butler, 90, M.S, 92; Ph.D, California, 06. Butler, prof, 91-97; Miami (O.), prof, 07-37.

DAVIS, Charles, *Agronomist.* Lakeland, Ind, 7/18/70, died, 25. B.S, Purdue, 96. Purdue, instr, 21-25. Soils and crops.

DAVIS, David R(oy), *Mathematics.* Clarkshill, Ind, 93; m. 20. A.B, Indiana, 17, A.M, 23; Ph.D, Chicago, 27. N. J. State Teachers Col. (Montclair), prof, 31-.

DAVIS, Donald W(alton), *Zoology, Genetics.* Frazer, Pa, 2/25/82, died, 50; m. 07, c. 3. A.B, Harvard, 05, Ph.D, 13. DePauw, prof, 14-16; Col. William and Mary, 16-50.

DAVIS, E(dward) W(ilson), *Metallurgy.* Cambridge City, Ind, 5/8/88; m. 15, c. 3. B.S, Purdue, 11, E.E, 14. Minnesota, exp. sta, dir. mines, 18-.

DAVIS, George E(arl), *Physics, Biophysics.* Warsaw, Ind, 12/29/89; m. 15. A.B, Indiana, 14; M.S, Iowa State Col, 22; Ph.D, Minnesota, 29. Ind. high schs, 14-18; U. S. Navy, phys, 44-.

DAVIS, H(arold) T(hauer), *Mathematics* (starred). Beatrice, Nebr, 10/5/92; m. 21, c. 3. A.B, Colo. Col, 15; A.M, Harvard, 19; Ph.D, Wisconsin, 26. Indiana, 23-37, prof, 34-37; Northwestern, prof, 37-.

DAVIS, H(ugh) Leslie, *Organic chemistry.* Tarkio, Mo, 7/16/95; m. 18, c. 1. B.S, Tarkio Col, 18; M.S, Purdue, 21; Ph.D, Iowa, 25. Purdue, instr, 21-23; Illinois, 25-, assoc. prof, 41-.

DAVIS, John J(une), *Entomology.* Centralia, Ill, 10/9/85; m. 46, c. 1. B.S, Illinois, 07. U. S. Dept. Agr. (W. Lafayette, Ind.), 11-19, Japanese beetle control proj, 19-20; Purdue, exp. sta, head dept, 20-. Entom. Soc. (pres, 32); Ind. Acad. Sci. (pres, 31, ed, 22-28). Japanese beetle; European corn borer.

DAVIS, Leslie Martz, *Geography.* Arcadia, Ind, 4/2/96; m. 21, c. 2. A.B, Indiana, 20; M.B.A, Northwestern, 26; Ph.D, Chicago, 35. Marshall Col, 39-, prof, 42-.

DAVIS, Lloyd H(ayes), *Medicine.* Crawfordsville, Ind, 1/10/89; m. 16, c. 1. A.B, Wabash Col, 11; A.M, Illinois, 13; M.D, Northwestern, 22. Wabash Col, asst. prof. bact, 29-33.

DAVIS, L(uther) D(ent), *Pomology.* Mooreland, Ind, 7/19/95; m. 26. B.S, Purdue, 25, M.S, 26; Ph.D, California, 29. California, col. agr, 29-, prof, 46-.

DAVIS, Olive Stull, *Herpetology.* Rochester, N. Y, 2/10/05; m. 30. A.B, Smith Col, 26; A.M, Michigan, 28, Ph.D, 29. Purdue, 43-.

DAVIS, Roland C(lark), *Psychology.* Cambridge, Mass, 12/2/02; m. 27, c. 2. A.B, Harvard, 24; Ph.D, Columbia, 30. Indiana, 31-, prof, 38-.

DAVIS, Roy B(enton), *Organic chemistry.* Bigelow, Mo, 8/25/90; m. 18, 26, c. 3. B.S, Earlham Col, 12; M.A, Missouri, 13. U. of South, prof, 18-.

DAVIS, Ward B., *Biochemistry.* Fortville, Ind, 10/24/93; m. 23, c. 3. A.B, Ind. State Nor. Sch, 18; M.S, Chicago, 22, Ph.D, 24. U. S. Dept. Agr, 25-.

DAVIS, W(illiam) W(inland), *Physical chemistry.* Parkersburg, W. Va, 4/3/08; m. 34, c. 4. A.B, Wabash Col, 33; Ph.D, Hopkins, 37. Eli Lilly & Co, 37-, head dept, 45-.

DAVISSON, S(chuyler) C(olfax), *Mathematics.* Galveston, Ind, 1/2/66; m. 90, c. 1. A.B, Indiana, 90, A.M, 92; Sc.D, Tubingen, 00. Indiana, 90-, prof, 08-38.

DAWSON, Ray F(ields), *Plant biochemistry.* Munice, Ind, 2/13/11; m. 42. A.B, DePauw, 35; Ph.D, Yale, 38. DePauw, instr, 39-40; Columbia, 45-, assoc. prof, 46-.

DAWSON, Raymond F(illmore), *Civil engineering.* Pennville, Ind, 9/20/00; m. 26. B.S, Purdue, 23; M.S, Texas, 36. Texas, 28-, assoc. prof, 40-.

DAY, Harry G(ilbert), *Biological chemistry.* Monroe Co, Ia, 10/8/06; m. 33, c. 3. A.B, Cornell Col. (Ia.), 30; Sc.D, Hopkins, 33. Indiana, 40-, prof, 50-.

DEAL, Prescott H. LaVerne, *Chemistry.* Gillet, Ark, 5/24/15; m. 41, c. 2. B.A, Kans. State Teachers Col, 37. Gen. Elec. (Ft. Wayne), 45-.

DEAM, Cha(rle)s C(lemon), *Forestry.* Bluffton, Ind, 8/30/65; m. 93, c. 1. Hon. Sc.D, DePauw, 32; LL.D, Indiana, 39. State forester, Ind, 09-13, 19-28, res. forester, 28-40. Ind. Acad. Sci. (pres, 23); author *Trees of Indiana, Flora of Indiana* (1940).

DEAN, John Candee, *Manufacture, Astronomy.* Deansboro, N. Y, 9/15/15, died, 28. Dean Bros. Co. (Indianapolis), pres. Wrote *Life of Count Rumford; Astronomical Superstitions; Mysteries of Matter.*

DEANE, Roy E(ric), *Geology.* Edmonton, Alta, Can, 8/30/09; m. B.Ap.Sc, British Columbia, 43; Ph.D, Toronto, 49. Indiana, asst. prof, 49-.

DEARING, William C(ockrum), *Chemistry.* Oakland City, Ind, 10/24/06; m. 29, c. 2. A.B, Oakland City Col, 26; A.M, Princeton, 27; Ph.D, Western Reserve, 35. Libbey-Owens-Ford Glass Co, 37-49, dir. res, 47-49.

DEAY, Howard O(wen), *Entomology.* Eudora, Kan, 3/5/96; m. 21, c. 1. A.B, Kansas, 26, A.M, 27, Ph.D, 34. Purdue, 29-, assoc. prof, 38-.

de BECZE, George I(mre), *Chemical engineering.* Csikszereda, Hungary, 2/8/03; m. 38, c. 3. B.A, Nador (Hungary), 25, M.A, 26, Ph.D, 48. Schenley Distilleries (Ind.), 38-, mgr. cent. control lab, 47-.

DEBUSK, Burchard Woodson, *Education, Psychology.* Shelbyville, Ind, 10/23/77, died, 36. A.B, Indiana, 04; Ph.D, Clark, 15. Oregon, prof, 15-36.

DEC, Joseph, *Organic chemistry*. Paterson, N. J, 1/12/13; m. 44. A.B, Indiana, 36; Ph.D, Illinois, 40. Johns-Manville Corp, 46-.

DECOURSEY, R(ussell) M(yles), *Entomology, Zoology*. Indianapolis, Ind, 1/17/00; m. 30, c. 2. A.B, DePauw, 23; A.M, Illinois, 25, Ph.D, 27. Connecticut, 29-, prof, 35-.

DEEMER, R(alph) B(arbour), *Chemistry*. Manhattan, Kans, 2/25/85; m. 09, c. 3. B.S, N. Mex. Col, 07. Purdue, exp. sta, 13-18. U. S. Dept. Agr, 18-44.

DEGERING, Ed(ward) F(ranklin), *Organic chemistry*. Dodge City, Kans, 5/17/98; m. 21. A.B, Union Col. (Nebr), 24; M.S, Nebraska, 29, Ph.D, 30. Purdue, 30-48, prof, 42-48. Ind. Acad. Sci. (pres, 46).

DEISS, Charles Frederick, *Geology*. Covington, Ky, 3/18/03; m. 29. A.B, Miami, 25; Ph.D, Michigan, 28. Indiana, chm. dept. and state geol, 45-.

DE KAY, H(enry) George, *Pharmaceutical chemistry*. Randolph, Nebr, 8/14/98; m. 20, c. 1. B.S, Nebraska, 28; M.S, Chicago, 30; Ph.D, Purdue, 34. Purdue, 28-, prof, 42-.

DELANNEY, Louis E(dgerton), *Zoology*. Omaha, Nebr, 2/2/12; m. 41, c. 1. B.A, California L. A, 35, M.A, 36; Ph.D, Stanford, 40. Notre Dame, 46-49; Wabash Col, assoc. prof, 49-.

DELISLE, Albert L(orenzo), *Botany*. Holyoke, Mass, 12/7/10. B.S, Mass. State Col, 32; A.M, Harvard, 33, Ph.D, 37. Notre Dame, assoc. prof. biol, 47-.

DELLINGER, O(ris) P(olk), *Cytology, Protozoology*. Bicknell, Ind, 8/14/77. A.B, Indiana, 05; Ph.D, Clark, 07. Kans. State Teachers Col. (Pittsburg), prof. biol, 09-39, dean, 39-.

DEMAREE, Delzie, *Botany*. Benham, Ind, 9/15/89. A.B, Indiana, 20; M.S, Chicago, 21; Ph.D, Stanford, 32. Ark. State Col, asst. prof, 36-.

DEMAREE, J(uan) B(rewer), *Plant pathology*. Madison, Ind, 7/22/85; m. 12, c. 4. B.S.A, Purdue, 10. U. S. Dept. Agr, Bur. Plant Indust, 18-, sr. path, 35-.

DEMMON, E(lwood) L(eonard), *Forestry*. Kendallville, Ind, 9/23/92; m. 25, c. 3. A.B, Michigan, 14, M.S.F, 16. Goodyear Tire & Rubber Co. (Sumatra), 16-23, silvicultur, 25-28, dir, 28-44; Lake States U. S. Forest exp. sta, 44-.

DENISON, M. C., *Chemistry*. Sheboygan, Wis, 4/23/04; m. 45. B.A, Wisconsin, 28, M.A, 29; Ph.D, Purdue, 40. Dupont Co, 39-.

DENNIS, D(avid) W(orth), *Biology, Photomicrography*. Dalton, Ind. 4/8/49, died, 16. A.B, Earlham Col, 73, A.M, 76; Ph.D, Syracuse, 86. High schs, Richmond, Ind, 75-79; Earlham, prof, 84-16. Ind. Acad. Sci. (pres, 01); Ind. Sci. Teachers' Assn. (pres, 98). Embryology.

DENNIS, John B(lacklidge), *Chemistry*. Indianapolis, Ind, 4/20/14; m. 47. A.B, Indiana, 36. Battelle Mem. Inst, 47-.

DENNISON, Raymond A(lexander), *Chemistry*. Sedalia, Ind, 7/12/14; m. 42, c. 2. A.B, Miami (O.), 36; M.S, Iowa, 40, Ph.D, 42. Florida, 46-.

DENNY, M(aurice) Ray, Jr, *Psychology*. Terre Haute, Ind, 11/5/18; m. 42, c. 2. B.S, Michigan, 42, M.A, 43; Ph.D, Iowa, 45. Mich. State Col, asst. prof, 46-.

DENUYL, Daniel, *Forestry*. Holland, Mich, 3/25/98; m. 23, c. 3. B.S.F, Mich. State Col, 22; M.S.F, Cornell, 26. Purdue, to assoc. prof, 28-.

DEPPE, Charles A(lexander), *Biology*. Bay, Mo, 7/27/81. A.B, Missouri, 02; A.M, La Grange Col, 10. Franklin Col, prof, 11-.

DERBY, Ira, *Chemistry*. Lyme, N. H, 9/20/73, died, 50; m, c. 1. S.B, Harvard, 99; Ph.D, Chicago, 10. Minnesota, prof, 03-18; Republic Creosoting Co. (Indianapolis), head chem, 18-30; Reilly Tar & Chemical Corp. (Indianapolis), 30-49. Coal tar products.

DE RYKE, Willis, *Zoology*. Ann Arbor, Mich, 3/4/85; m. 13, c. 1. A.B, Indiana, 17, A.M, 22; Ph.D, Iowa, 25. Indiana, 19-21; Illinois Col, prof, 27-.

DETTWILER, H(erman) A(ndrew) *Bacteriology*. Monroe, Wis, 3/1/10; m. 40, c. 3. B.S, Wisconsin, 35; M.S, Ohio State, 37, Ph.D, 39. Eli Lilly & Co, 40-, asst. dir. biol. div, 46-.

DE TURK, E(rnest) E., *Agronomy*. Martinsville, Ind, 9/24/87; m. 14, 43, c. 2. B.S.A, Purdue, 13; M.S, Pa. State Col, 16; Ph.D, Illinois, 19. Illinois, 19-, head div, 25-. Plant nutrition.

DEUPREE, John F(rancis), *Chemistry*. Bloomington, Ind, 5/16/10; m. 37. A.B, Indiana, 32, M.A, 33, Ph.D, 36. Detroit, 42-, assoc. prof, 47-.

DE VOL, Charles E(dward), *Botany*. Luho, Ku, China, 10/2/03. A.B, Marion Col, 26; A.M, Indiana, 39. Marion Col, asst. prof. biol, 28-30, 37-.

DE VRIES, Tho(ma)s, *Physical chemistry*. Smilde, Netherlands, 7/15/01, nat, 20; m. 31, 39, c. 2. A.B, Hope Col, 23; M.S, Illinois, 24, Ph.D, 26. Purdue, 27-, prof, 40-.

DEW, Walter A(rthur), *Physical chemistry.* Wilmington, Del, 6/4/00. B.S, Princeton, 21, A.M, 22, Ph.D. Dupont Co, 24-, Ind. ordnance works, 41-42, Jeffersonville, Ind, plant, 43-.

DE WULF, Emiel, *Physics.* South Bend, Ind, 3/26/83, died, 30. A.B, Notre Dame, 03. Notre Dame, 27-30.

DICK, George F(rederick), *Internal medicine* (starred). Ft. Wayne, Ind, 7/21/81; m. M.D, Rush, 05. Rush, prof, 18-45. Scarlet fever.

DICKEY, Paul S(mith), *Mechanical engineering.* Monticello, Ind, 9/21/03; m. 37, c. 3. B.S, Purdue, 25, M.E, 35. Bailey Meter Co, 32-, dir. res, 38-44.

DICKSON, George (Robert), *Physics.* Henryville, Ind, 3/11/16; m. 42, c. 2. A.B, DePauw, 38; M.A, Indiana, 40. U. S, Bur. Standards, 40-.

DICUS, A(aron) W(esley), *Physics.* Festus, Mo, 5/30/88; m. 09, c. 3. B.S, Marion Col, 12; A.B, Indiana, 26, M.A, 28, Ph.D, 32. Ind. high schs, 13-20; Tenn. Poly. Inst, head dept, 30-.

DIEHL, Harvey C(larence), *Analytical chemistry.* Detroit, Mich, 11/2/10; m. 36, c. 5. B.S, Michigan, 32, Ph.D, 36. Purdue, instr, 37-39; Iowa State Col, 39-, prof, 47-.

DIEHL, William Webster, *Botany.* Logansport, Ind, 1/15/91; m. 17, c. 1. A.B, Miami (O.), 14, M.S, Iowa State Col, 15; Ph.D, Harvard, 32. U. S. Dept. Agr, 19-, mycol, 45-.

DIEHM, R(obert) A(dam), *Biochemistry.* Avilla, Ind, 8/22/03. B.S.A, Purdue, 26; M.S, Rutgers, 28, Ph.D, 30. Container Corp. Am, microbiol, 30-.

DIETTERT, R(euben) A(rthur), *Botany.* North Judson, Ind, 9/22/01; m. 26, c. 3. A.B, DePauw, 25; M.S, Mich. State Col, 27; Ph.D, Iowa, 37. Montana, 38-, prof, 48-.

DIETZ, Albert A(rnold Clarence), *Organic chemistry, Biochemistry.* Port Huron, Mich, 8/15/10; m. 37, c. 2. B.S, Toledo, 32, M.S, 33; Ph.D, Purdue, 41. Purdue, instr, 41-42; Toledo Hosp, Inst. Med. Res, biochem, 43-.

DIETZ, Harry F(rederic), *Entomology.* Indianapolis, Ind, 12/8/90; m. 14, c. 4. B.A, Butler, 14; M.A, Ohio State, 30, Ph.D, 31. Asst. state entom, Ind, 14-16; State Dept. Conserv, Ind, 20-29; Dupont Co, 37-.

DIGGS, S(terling) H(enry), *Chemistry.* Port Haywood, Va, 5/16/79; m. B.S, M.S, Virginia, 12, Ph.D, 14. Standard Oil Co. Ind, 14-40, dir. res, 23-40.

DILKS, Eleanor, *Biology.* Richmond, Ind, 1/29/21. A.B, Earlham Col, 42; M.S, Wisconsin, 44, Ph.D, 46. Earlham Col, instr, 42-43; Buffalo, endocrin, 47-.

DILLON, Thomas Edward, *Organic chemistry.* Girard, O, 8/26/13; m. 43, c. 2. B.S, Notre Dame, 37, M.S, 40, Ph.D, 42. Dupont Co, 42-, plant chem, 43-.

DINERSTEIN, Robert A(lvin), *Chemistry.* N. Y. C, 1/4/19; m. 41, c. 2. B.S, Col. City N. Y, 39; M.S, Pa. State Col, 40. Standard Oil Co. Ind, 46-.

DINGLE, George W(illiam), *Physical chemistry.* Newcastle, Ind, 12/30/03; m. 24. A.B, M.A, Indiana, 31, Ph.D, 35. U. S. Fed. Bur. Invest, asst. ch, document sect, 43-.

DINIUS, James H(enry), *Chemical engineering.* Huntington, Ind, 11/3/17; m. B.S.Ch.E, Purdue, 39. Kimberly-Clark Corp, 45-.

DIRKS, C(harles) O(rville), *Entomology.* Pawnee Rock, Kans, 3/29/95; m. 25, c. 1. B.S, Kans. State Col, 24; M.S, Iowa State Col, 25; Ph.D, Cornell, 35. Purdue, instr, 25-27; Maine, 27-, prof, 47-.

DIRKSE, T(hedford) P(reston), *Chemistry.* Holland, Mich, 1/5/15; m. 42, c. 2. A.B, Calvin Col, 36; A.M, Indiana, 37, Ph.D, 39. Calvin Col, assoc. prof, 47-.

DISCHER, Clarence A(ugust), *Inorganic chemistry.* Oshkosh, Wis, 7/22/12; m. 41. Ed.B, Oshkosh Teachers Col, 35; M.A, Indiana, 45, Ph.D, 47. Rutgers, asst. prof, 47-.

DISMORE, Paden F(asold), *Organic chemistry.* Chicago, Ill, 6/25/22. B.S, Illinois, 43; Ph.D, Indiana, 48. Monsanto Chem. Co, 48-.

DIWOKY, Fred F(rank), *Organic chemistry.* Council Bluffs, Ia, 12/18/03; m. 31, c. 2. B.S, Oregon State Col, 26; M.S, Wisconsin, 27, Ph.D, 30. Standard Oil Co. Ind, 30-40; Stanolind Oil & Gas Co, 46-.

DIXON, Harry S(terling), *Electrical engineering.* Woodland, Calif, 11/30/10; m. 37, c. 4. B.A, Stanford, 31, E.E, 36. Purdue, instr, 37-42; N. Dak. Agr. Col, prof, 45-.

DIXON, Helen, *Botany.* Chicago, Ill, 10/11/95. B.S, Chicago, 19, M.S, 26, Ph.D, 33. Instr, Chicago schs, 21-. Physiographic plant ecology, Fountain County, Ind.

DOAK, K(enneth) D(avis), *Plant pathology.* Hebron, Ind, 12/2/03. B.S.A, Purdue, 26, M.S, 29, Ph.D, 31. U. S. Dept. Agr, 30-.

DOAN, C(harles) S(hambaugh), *Mathematics.* Wilmington, O, 6/30/90. B.S, Wilmington Col, 11; A.B, Swarthmore Col, 12; A.M, Pennsylvania, 17. Purdue, asst. prof, 18-.

DOAN, Martha, *Chemistry*. Westfield, Ind, 6/6/72. B.S, Purdue, 91, M.S, 93; B.Lit, Earlham, 92; Sc.D, Cornell, 96. Teacher, Manual Training High Sch. (Indianapolis), 96-00; Vassar, 00-14; Earlham, prof, 15-26; Iowa Wesleyan, 29-37.

DOAN, Richard L(loyd), *Physics*. Lapel, Ind, 9/7/98; m. 26, c. 2. A.B, Indiana, 22, A.M, 23; Ph.D, Chicago, 26. Phillips Petrol. Co, asst. dir, 45-.

DOBBINS, R(aymond) A(nson), *Biology*. Kokomo, Ind, 12/31/95; m. 25, c. 2. B.S, Ohio Northern, 17; A.B, Ohio State, 20, M.S, 22, Ph.D, 37. Ohio Northern, prof, 26-45.

DODDS, Ja(me)s Findley, *Mathematics*. Lincoln Co, Ky, 11/1/07, died, 86. A.B, Indiana, 34. Indiana, prof, 37-40; practiced medicine in Bloomington, Ind, 45-86.

DODSON, Edward O., *Zoology*. Fargo, N. Dak, 4/26/16; m. 40, c. 3. B.A, Carleton Col, 39; Ph.D, California, 47. Notre Dame, instr, 47-.

DOERMANN, A(ugust) H(enry), *Biology*. Blue Island, Ill, 12/7/18; m. 47. A.B, Wabash Col, 40; M.A, Illinois, 41; Ph.D, Stanford, 46. Carnegie Institution, 47-.

DOERR, John E(dward), *Geology*. Mt. Vernon, Ind, 11/10/01; m. 32, c. 2. A.B, Wisconsin, 24, A.M, 26. Natl. Park Serv, 31-, Hawaii, 31-35, Crater Lake, 35-40, ch. nat, 41-.

DOLIAN, Frank E(ugene), *Chemistry*. Coalmont, Ind, 8/16/09; m. 38, c. 3. A.B, Indiana, 30, A.M, 31, Ph.D, 33. Commercial Solvents Corp, 33-, tech. serv. staff, 46-.

DOLORETTA, Sister M. (Thorn), *Chemistry*. Clearfield, Pa, 10/16/85. B.S, Canisius Col, 26; M.S, Notre Dame, 31, Ph.D, 36. Villa Maria Col, 26-, prof, 31-.

DONAGHY, Fred, *Physiology, Biology*. Ossian, Ind, 3/3/74, died, 38. A.B, Ind. State Teachers Col, 12; M.A, Indiana, 15; Ph.D, Hopkins, 28. Ind. State Teach. Col, instr. to prof, 15-38.

DONAHUE, Joseph N, C.S.C, *Physics*. South Bend, Ind, 2/26/89; died, 28. A.B, Notre Dame, 16; M.Sc, Mass. Inst. Tech, 20. Notre Dame, prof, 20-22.

DONHAM, C(harles) R(umpel), *Veterinary science*. Rockport, Ind, 8/1/98; m. 21. D.V.M, Iowa State Col, 21; M.S, Oregon State Col, 28. Purdue, prof. and ch. vet. exp. sta, 40-.

DONOVAN, Paul B(laine), *Physiological chemistry*. Terre Haute, Ind, 5/8/92; m. 28, c. 1. A.B, Ind. State Teachers Col, 23; M.S, Chicago, 26, Ph.D, 33. Ind. pub. schs, 11-25; Rees-Stealy Med. Res. Fund, Ltd, dir. res, 38-.

DOODY, Thomas C(lare), *Chemistry*. San Rafael, Calif, 10/13/01; m. 39. B.S, California, 24, M.S, 25, Ph.D, 38. Purdue, assoc. prof, 47-.

DOOLITTLE, C(harles) L(eander), *Astronomy* (starred), *Mathematics*. Ontario, Ind, 11/12/43, died, 19; m. 66. C.E, Michigan, 74, hon. Sc.D, 96. Lehigh, prof, 75-95; Pennsylvania, prof, 95-19.

DOOLITTLE, Eric, *Astronomy*. Ontario, Ind, 7/26/69, died, 20; m. 02. C.E, Lehigh, 91. Pennsylvania, prof, 04-20. (Son of C.L.D.)

DORAN, Ray L(ewis), *Physics*. Magna, Ut, 1/10/15; m. 39, c. 3. B.A, Utah, 36; Ph.D, Purdue, 41. Utah, 46-, assoc. prof, 49-.

DORAN, Wilbur J(ames), *Chemistry*. St. Louis, Mo, 2/13/07; m. 34, c. 3. B.S, Illinois, 30. Eli Lilly & Co, 30-.

DORNER, H(erman) B(ernard), *Horticulture*. Lafayette, Ind, 4/10/78. B.S, Purdue, 00, M.S, 01. Purdue, instr, 01-02; Wabash Col, instr, 06-08; Illinois, 11-, prof, 18-.

DORNTE, Ralph W(illiam), *Chemistry*. Ft. Wayne, Ind, 11/27/05; m. 31. B.S, Purdue, 27; M.S, Cornell, 29; Ph.D, Princeton, 31. Gen. Elec, 33-42.

DORR, Henry, Jr, *Forest Economics*. Chicago, Ill, 7/2/94; m. 31, c. 2. B.S, Mich. State Col, 18; M.F, Michigan, 31. Purdue, instr, 30-32; Tennessee, asst. prof, 37-.

DORRIS, Thomas B(asil), *Chemistry*. Cape Vincent, N. Y, 8/17/06. B.S, Notre Dame, M.S, 34, Ph.D, 36. Manhattan Col, prof, 36-.

DORSKY, Julian, *Chemistry*. N. Y. C, 5/11/16; m. 40, c. 2. A.B, Brooklyn Col, 36; M.S, Pa. State Col, 37; Ph.D, Purdue, 39. Ethyl Corp, 39-46; Mellon Inst, 46-.

DORST, Paul W(illiam), *Lithography*. New Albany, Ind, 6/8/03; m. 23, c. 1. Ch.E, M.S, Cincinnati, 27. Cincinnati, from asst. to res. assoc, 27-44.

DOTTERER, J(ohn) E(zra), *Mathematics*. Union Bridge, Md, 10/4/88; m. 19. A.B, Blue Ridge Col, 12; A.M, Illinois, 17. Manchester Col, 19-43, head dept, 27-43; Ind. Central Col, prof, 43-46.

DOTY, D(elbert) M(alcolm), *Agricultural biochemistry*. Union Co, Ind, 4/27/08; m. 30, c. 2. B.S.A, Purdue, 29, M.S, 32, Ph.D, 41. Purdue, 29-48, assoc. prof, 43-48.

DOTY, Paul (Mead), *Physical chemistry*. Charleston, W. Va, 6/1/20; m. 42. B.S, Pa. State Col, 41; M.A, Columbia, 43. Notre Dame, asst. prof, 46-48; Harvard, asst. prof, 48-.

DOUGLASS, Benjamin Wallace, *Author.* Indianapolis, Ind, 2/17/83, died, 39. State Bd. Forestry, Ind, 04-06; state entom, Ind, 07-11. Author: *Orchard and Garden,* 17, *Every Step in Beekeeping,* 21, *Fruit Growing,* 22, *Brown County,* 36.

D'OUVILLE, Edmond L(awrence), *Organic chemistry.* Philadelphia, Pa, 6/10/09; m, c. 5. B.S, Villanova Col, 32; M.S, Pennsylvania, 34, Ph.D, 37. Standard Oil Co. Ind, 37-42.

DOYLE, L(eo) P(hilip), *Animal pathology.* Loogootee, Ind, 10/15/85; m. 15, c. 4. B.S.A, Purdue, 11; M.S, Michigan, 24; D.V.M, Mich. State Col, 31; Ph.D, Chicago, 32. Purdue, 15-, assoc. prof, 18-47, prof, 47-.

DRAGT, Gerrit, *Analytical chemistry.* Grand Rapids, Mich, 8/28/08; m. 34, c. 3. A.B, Calvin Col, 31; M.S, Purdue, 33, Ph.D, 37. Dupont Co, 37-.

DRAKE, John L(ouis), *Mechanical engineering.* Plymouth, Ind, 7/30/92; m. 15, c. 4. Libby-Owens-Ford Glass Co, dir. eng.

DRAKE, Mack, *Agronomy.* Fairbanks, Ind, 8/7/15; m. 42, c. 3. B.S.A, Purdue, 37, M.S, 39, Ph.D, 46. Massachusetts, exp. sta, soils, 48-.

DRAPEAU, Joseph Edward, Jr, *Metallurgy.* New Milford, Conn, 4/16/99; m. 23, c. 3. Chem.E, Rensselaer Poly. Inst, 22; M.S, Utah, 23. Glidden Co. (Hammond, Ind.), 31-, tech. dir, 33-.

DRAPER, Olive May, *Mathematics.* O'Brien Co, Ia, 8/3/87. A.B, Taylor, 14; A.M, Michigan, 24. Taylor, prof. chem, 15-26, math, 26-.

DRESSER, Thorpe, *Chemical engineering.* Garfield, Ut, 3/2/11; m. 41, c. 1. B.S, Mo. Sch. Mines, 33; M.S, Rensselaer Poly. Inst, 34, D.Chem.E, 36. Sinclair Ref. Co. (Whiting, Ind.), 36-, asst. div. ch, 49-; Purdue, exten, instr, 41-43.

DRESSLAR, F(letcher) B(ascom), *Psychology.* Banta, Ind, 9/21/58, died, 30. A.B, Indiana, 89, A.M, 92; Ph.D, Clark, 94. Ind. high schs, 89-91; Peabody Col, prof, 13-30.

DRINKWATER, W(illiam) Dale, *Aeronautical engineering.* Minneapolis, Minn, 5/23/20; m. 43, c. 4. B.Ae.E, Minnesota, 42, M.S, 47. Notre Dame, asst. prof, 48-.

DRYER, C(harles) R(edway), *Geography, Geology.* Victor, N. Y, 8/31/50, died, 27; m. 74, c. 2. A.B, Hamilton Col, 71; M.D, Buffalo, 76. High schs. (Ft. Wayne, Ind.), 77-90; asst, Ind. Geol. Surv, 87-93; Ind. State Nor. Sch, prof, 93-13. Assn. Am. Geog. (pres, 19); Ind, Acad. Sci. (pres, 11). Geology, physiography and geography of Indiana; author, *Studies in Indiana Geography,* 97.

DUBLIN, William B(rooks), *Pathology.* Little Rock, Ark, 12/10/09; m. 42, c. 1. A.B, California L. A, 29; M.A, California, 33, M.D, 36. Minnesota, Mayo Found, 37-40; Indianapolis Gen. Hosp, 45-49.

DUBOIS, Franklin S(mith), *Psychiatry.* Liberty, Ind, 1/26/06; m. 29, c. 2. A.B, Wabash Col, 26; M.S, Chicago, 28, M.D, Rush, 31. Alabama, 31-37, prof, 33-37.

DUBOIS, H(enry) M(athusalem), *Paleontology, Botany, Ornithology.* Logansport, Ind, 8/22/87. A.B, Indiana, 13, A.M, 14. Illinois, 14-17; Ore. high schs, 17-30.

DUBRIDGE, Lee A(lvin), *Physics* (starred). Terre Haute, Ind, 9/21/01; m. 25, c. 2. A.B, Cornell Col. (Ia.), 22; A.M, Wisconsin, 24, Ph.D, 26. Rochester, prof, 38-46; Calif. Inst. Tech, pres, 46-. Natl. Acad. Sci; Physical Soc. (pres, 47). Radar.

DUELL, Prentice, *Archeology.* New Albany, Ind, 8/17/94. A.B, California, 16; A.M, Arizona, 17; M.Archit, Harvard, 24. Chicago, assoc. prof. ancient Mediterranean art, 31-36.

DUFF, A(lexander) Wilmer, *Physics* (starred). St. John, N. B, Can, 5/23/64; m. 94, c. 1. B.A, New Brunswick, 84; B.A, London, 87; M.A, Edinburgh, 88, B.Sc, 93, D.Sc, 01. Purdue, prof, 93-99; Worcester Poly. Inst, prof, 99-36.

DUFFIN, R(ichard) J(ames), *Mathematics, Physics.* Chicago, Ill, 10/13/09. B.S, Illinois, 32, Ph.D, 35. Purdue, instr, 36-40; Carnegie Institution, terrestrial magnetism, 42-.

DUGAN, Le Roy, Jr, *Organic chemistry.* Petersburg, Ind, 8/18/15; m. 38, c. 2. B.S, Indiana, 37; Ph.D, Washington (Seattle), 42. Am. Meat Inst. Found, 48-.

DUMBLE, E(dwin) T(heodore), *Geology.* Madison, Ind, 3/28/52, died, 27. Tex, state geol, 88-96.

DUNCAN, Catherine G(ross) (Mrs. Robert E. Duncan), *Botany, Bacteriology.* Manilla, Ind, 4/4/08; m. 40, c. 1. A.B, DePauw, 31; A.M, Wisconsin, 33, Ph.D, 35. U. S. Dept. Agr, forest prods. lab, 42-, path, 44-.

DUNCAN, D(avid) C(hristie), *Physics*. Churchville, N. Y, 7/30/89; m. 13, c. 2. A.B, Michigan, 11, A.M, 13, Ph.D, 24. Purdue, 11-18, asst. prof, 16-18; Pa. State Col, prof, 18-.

DUNCAN, John C(harles), *Astronomy* (starred). Knightstown, Ind, 2/8/82. A.B, Indiana, 05, A.M, 06; Lowell Observ, 05-06; Lick Observ, 07-09; Ph.D, California, 09. Indiana, instr, 06-07; Harvard, instr, 09-16; Mt. Wilson Observ, 22-.

DUNCAN, Ralph W(infred), *Physics*. Oakland City, Ind, 9/19/82; m. 35. A.B, Indiana, 09; Ph.D, Pennsylvania, 12. Ind. high schs, 07-09; Pennsylvania, 12-, asst. prof, 21-29, prof, 29-.

DUNCAN, Robert C(arithers), *Physics*. Loveland, Colo, 7/14/86; m. 24, c. 2. A.B, Indiana, 09; Ph.D, Pennsylvania, 12. Naval Ordnance lab, 20-47, ch. phys, 43-47.

DUNCAN, Wallace E(dwin), *Chemistry*. New Albany, Ind, 6/29/02; m. 27, c. 3. A.B, Baker, 24; Ph.D, Hopkins, 31. Sul Ross Col, 43-.

DUNCAN, Wilbur H(oward), *Ecology*. Buffalo, N. Y, 10/15/10; m. 41, c. 1. A.B, Indiana, 32, M.A, 33; Ph.D, Duke, 38. Georgia, 38-, assoc. prof, 46-.

DUNCOMBE, C(harles) G(ross), *Chemical engineering*. Gordonsville, Va, 3/14/89; m, c. 2. B.Ch.E, Ohio State, 16, M.S, 29, Ph.D, 31. Prest-O-Lite Co. (Ind.), 21-27; Detroit, prof, 36-.

DUNGAN, Irvine M(itchell), *Psychology*. Newcastle, Ind, 6/19/00; m. 26, c. 3. B.A, Ohio State, 22. Missionary (China), 22-25, 28-46; Berea Col, prof, 46-.

DUNHAM, D(avid) H(anon), *Bacteriology*. Indianapolis, Ind, 11/23/95. B.S, Purdue, 20, M.S, 22; Ph.D, Wisconsin, 31. Purdue, 29-, assoc. prof, 39-.

DUNHAM, D(onald) W(est), *Zoology*. Stuyvesant Falls, N. Y, 12/2/08; m. 35, c. 1. B.S, Muskingum Col, 34; M.A, Ohio State, 36, Ph.D, 41. Evansville Col, 41-, prof, 45-.

DUNHAM, Harman W(arren), *Biology*. Indianapolis, Ind, 5/27/99; m. 31, c. 3. B.S, Purdue, 22, M.S, 28. Benton Harbor Jr. Col, prof, 47-.

DUNIHUE, F(red) W(illiams), *Anatomy*. Bowling Green, Ky, 6/9/06; m. 34, c. 3. A.B, Wabash Col, 29; M.Sc, N. Y. U, 31, Ph.D, 34. Vermont, col. med, 36-, assoc. prof, 44-.

DUPUIS, Robert N(ewell), *Chemistry*. Indianapolis, Ind, 6/4/10; m. 35, c. 2. A.B, Illinois, 31; Ph.D, N. Y. U, 34. Miner Labs, 35-47.

DURHAM, O(ren), *Botany*. Hamilton Co, Kans, 4/2/89. Swan-Myers Co. (Indianapolis), ch. bot, 25-30; Abbott Labs, 30-.

DUSHANE, Graham (Phillips), *Experimental embryology*. South Bend, Ind, 7/20/10; m. 33, c. 3. A.B, Wabash Col, 30; Ph.D, Yale, 34. Chicago, 36-45, asst. prof, 41-45; Stanford, prof, 46-.

DUTCHER, John B(enjamin), *Physics*. Decatur, Ind, 7/17/75, died, 37. A.B, Indiana, 06, A.M, 07, Ph.D, 15. Indiana, 07-37, assoc. prof, 15-37.

DUTTON, Carl E(vans), *Geology*. Dunkirk, O, 1/24/04. A.B, DePauw, 26; A.M, Illinois, 28; Ph.D, Minnesota, 31. U. S. Geol. Surv, 43-.

DUVALL, T(rumbull) G(illette), *Philosophy, Psychology*. Indianapolis, Ind, 3/20/61. A.B, DePauw, 88; Ph.D, Boston, 92. DePauw, instr, 92-95; Ohio Wesleyan, prof, 95-31.

DYE, Edward Randolph, *Structural engineering*. Linton, Ind, 3/10/02; m. 45, c. 2. B.S.C.E, Purdue, 24, C.E, 30. Ind. State Hy. Comn, 24-25, 26-29; Cornell Aeronaut. Lab, 47-.

DYER-BENNET, John, *Mathematics*. Liecester, Eng, 4/17/15, nat. 42. A.B, California, 36, A.M, 37; M.A, Harvard, 39, Ph.D, 40. Purdue, 46-, asst. prof, 47-.

DYSINGER, Don(ald) W(arren), *Psychology*. Logansport, Ind, 9/8/04; m. 38, c. 2. A.B, California L. A, 28; M.A, Iowa, 29, Ph.D, 31. Nebraska, 32-, assoc. prof, 42-, chm. dept, 47-.

EACHUS, Joseph J(ackson), *Mathematics*. Anderson, Ind, 11/5/11; m. 45, c. 2. A.B, Miami (O.), 33; A.M, Syracuse, 36; Ph.D, Illinois, 39. Purdue, instr, 39-42; U. S. Navy, elec. eng. dept, 46-.

EAGER, Sherman W(esley), *Physics*. Vincennes, Ind, 1/28/88; m, c. 6. A.B, Indiana, 23, Ph.D, 38. Okla. A. & M. Col, 23-, prof, 41-46, head dept, 46-.

EADS, James Buchanan, *Engineering, Inventing*. Lawrenceburg, Ind, 5/23/20, died, 87; m, c. 2. At 22 invented diving bell. In 1861 advised Lincoln on utilization of attack and defense of western rivers. In 1867 designed and in 1874 completed first bridge across the Mississippi at St. Louis. In 1879 completed jetties at mouth of Miss. An internationally known engineer.

EAGLESON, Halson V(ashon), *Physics*. Bloomington, Ind, 3/14/03; m. 32, 41, c. 3. A.B, Indiana, 26, A.M, 31. Howard, prof, 47-.

EAGLESON, Oran Wendle, *Psychology*. Unionville, Ind, 3/14/10; m. 40, c. 1. A.B, Indiana, 31, A.M, 32, Ph.D, 35. Spelman Col, prof, 36-. (Bro. of H.V.E. Negroes.)

EARP, Samuel E., *Internal medicine.* Lebanon, Ill, 12/19/58, died, 30. B.S, McKendree Col, 79, M.S, 81; M.D, Ind. Central Col, 82. Ind. Central Col. Physicians and Surg, dean, 83-01; Indiana, prof. clin, 07-20.

EASH, John T(rimble), *Metallurgy.* Albany, Ind, 9/1/06; m. 27, c. 2. B.S, Purdue, 28; M.S, Michigan, 29, Ph.D, 32. Int. Nickel Co, 31-.

EASH, Ralph D(ee), *Chemistry.* Bunkerhill, Ind, 2/22/98; m. 23, c. 3. A.B, Albion Col, 22. Holland Color & Chem. Co, to v. p. 35-.

EASTES, John W(esley), *Chemistry.* Greenfield, Ind, 4/4/10; m. 41, c. 1. B.S, Butler, 31; M.A, Cincinnati, 33. Am. Cyanamid Co, Calco Chem. Div, 45-.

EASTLACK, Herbert E(ugene), *Chemistry.* Crawfordsville, Ind, 5/17/90; m. 16, c. 1. A.B, Wabash Col, 12; Ph.D, Columbia, 16. Dupont Co, 18-, asst. to dir, 43-.

EASTMAN, Nicholson J(oseph), *Obstetrics.* Crawfordsville, Ind, 1/20/95; m. 25, c. 2. A.B, Yale, 16; M.D, Indiana, 21. Indiana, instr, 22-24; Hopkins, 28-33, prof, 35-.

EASTON, W(illia)m H(eyden), *Geology.* Bedford, Ind, 1/14/16; m. 40, c. 2. B.S, Geo. Washington, 37, A.M, 38; Ph.D, Chicago, 40. Ill. Geol. Surv, 40-46; South. California, assoc. prof, 46-.

EATON, D(urward) L(eslie), *Physics.* Liberty, Ind, 4/28/81; m. 16, c. 5. B.S, Earlham Col, 07; A.M, Colorado, 08; Ph.D, Indiana, 27. Ind. Cent. Col, prof, 09-31.

EATON, J(ames) R(obert), *Electrical engineering.* Bluffton, Ind, 11/1/02; m. 29, c. 1. B.S.E.E, Purdue, 25, Ph.D, 42. Purdue, to prof, 40-.

EATON, Scott V(erne), *Plant physiology.* Liberty, Ind, 11/7/85; m. 18, c. 2. A.B, Earlham Col, 08; S.M, Chicago, 13, Ph.D, 20. Ind. high schs, 09-12; Chicago, 21-, asst. prof, 25-.

EATON, V(ernet) E(ller), *Physics.* Castleton, Ind, 12/25/95; m. 23, c. 1. B.A, Indiana, 21, M.A, 24, Ph.D, 31. Wesleyan, 25-, prof, 46-.

EBY, Lawrence Thorton, *Organic chemistry.* South Bend, Ind, 5/3/16; m. 41, c. 2. B.S, Notre Dame, 38, M.S, 39, Ph.D, 41. Standard Oil Develop. Co, 41-.

ECKEL, John F., *Metallurgy.* Leon, Kans, 1/24/03; m. 29, c. 2. A.B, Kansas, 25; M.S, Carnegie Inst. Tech, 28, D.Sc, 32. Purdue, assoc. prof, 39-45; Gen. Elec, 45-.

ECKERMAN, Arthur C(harles), *Psychology.* Tombstone, Ariz, 9/20/10; m. 40, c. 1. A.B, Pomona Col, 35; M.A, Baylor, 39; Ph.D, Purdue, 48. H. P. Smith Paper Co, 48-.

EDDY, Henry Turner, *Mathematics, Engineering.* Stoughton, Mass, 6/9/44, died, 21; m. 70. A.B, Yale, 67, A.M, 70; C.E, Cornell, 70, Ph.D, 72; Sc.D, Yale, 12. Cincinnati, prof, 74-90, dean, 74-77, 84-89; Rose Poly. Inst, pres, 91-94; Minnesota, prof, 94-12, dean grad. sch, 06-12.

EDELMAN, I(sidore) S(amuel), *Medicine.* N. Y. C, 7/23/20; m. 42, c. 1. B.A, Indiana, 41, M.D, 44. Harvard, med. sch, 49-.

EDGELL, Walter F(rancis), *Chemistry.* Kokomo, Ind, 7/26/16; m. 37, c. 2. B.S, California, 39; M.S, Iowa, 41; Ph.D, Harvard, 44. Iowa, 43-, assoc. prof, 46-.

EDINGTON, Will(iam) E(dmund), *Mathematics.* Rantoul, Ill, 12/8/86; m. 19, c. 1. A.B, Ind. State Nor. Sch, 09; A.M, Illinois, 19, Ph.D, 21. Ind. State Nor. Sch, instr, 11-12; Purdue, instr. to assoc. prof, 22-30; DePauw, prof, 30-. Ind. Acad. Sci. (pres, 37).

EDMISTER, W(ayne) C(lintie), *Petroleum.* Cleveland, O, 3/22/09; m. 34, c. 2. B.S, Okla. A. & M. Col, 32, Chem.E, 42; M.M.E, Cornell, 34. Standard Oil Co. Ind, 34-43; Carnegie Inst. Tech, prof, 48-.

EDMONDSON, C(larence) E(dmund), *Physiology, Hygiene.* Ellettsville, Ind, 4/9/83, died, 44. A.B, Indiana, 06, A.M, 12, Ph.D, 14. Indiana, 12-40, dean men, 19-40, prof. hygiene, 25-40.

EDMONDSON, Frank K(elley), *Astronomy.* Milwaukee, Wis, 8/1/12; m. 34, c. 2. A.B, Indiana, 33, M.A, 34, Ph.D, Harvard, 37. Indiana, 37-, prof, 50-.

EDWARD, Sister Mary (Pottebaum), *Chemistry.* Luxemburg, Ia, 5/28/03. B.A, Iowa, 33, M.S, 34; Ph.D, Notre Dame, 42. Briar Cliff Col, 34-, prof, 41-.

EDWARDS, Beatrice, *Biochemistry.* Denver, Colo, 7/21/02. A.B, Denver, 24, A.M, 28; Ph.D, Iowa, 42. St. Mary-of-the-Woods Col, prof, 42-.

EDWARDS, Charles L(incoln), *Zoology* (starred). Oquawka, Ill, 12/8/63, died, 37. B.S, Lombard, 84; B.S, Indiana, 86, A.M, 87; Ph.D, Leipzig, 90. Cincinnati, prof, 94-00; Trinity (Conn.), prof, 00-10.

EDWARDS, Leroy D(elos), *Pharmacognosy, Pharmacology.* Lancaster, Wis, 5/12/97; m. 25, c. 1. Ph.G, Wisconsin, 21, B.S, 23; A.M, West. Reserve, 31, Ph.D, 36. Indianapolis Col. Phar, instr, 24-28; Purdue, prof, 45-.

EDWARDS, P(rentice) D(earing), *Mathematics.* Owensville, Ind, 12/21/95; m. 21, c. 1. B.S, Oakland City Col, 15; M.A, Indiana, 23, Ph.D, 29. Ind. high schs, 15-26; Ball State Teachers Col, 26-, prof, 40-.

EGGENBERGER, Delbert N(orgaard), *Chemistry.* Emington, Ill, 5/28/14; m. 35, c. 3. B.Ed, Ill. State Nor, 35; M.S, Ill. Inst. Tech, 47. Elec. Generating Corp. (Ind.), 42-46; Armour & Co, 46-.

EGLI, Paul Henry, *Chemical engineering.* Mt. Vernon, Ind, 4/14/17; m. 42, c. 1. B.S, Purdue, 38, M.S, 40. Eli Lilly & Co, 41-42; Naval Res. Lab, head crystal sect, 46-.

EGLY, Richard S(amuel), *Chemical engineering.* Grabill, Ind, 7/6/14. B.S, Purdue, 36; M.S, Illinois, 38, Ph.D, 40. Commercial Solvents Corp, 40-.

EGRY, C(harles) Robert, *Industrial engineering.* Dayton, O, 10/20/97; m. 23, c. 3. B.S.M.E, Purdue, 22, M.E, 36. Purdue, instr, 29-36; Notre Dame, prof, 39-.

EHRHARDT, C(harles) H(enry), *Physics.* Plainfield, Wis, 12/21/10; m. 39, c. 1. B.S, Hillsdale Col, 33; Ph.D, Purdue, 39. Purdue, instr, 39-40; Universal Oil Prods. Co. (Chicago), 40-47; Standard Oil Co. Ind, 49-.

EIGELSBACH, Henry T(homas), *Bacteriology.* Oak Park, Ill, 1/4/19; m. 45. B.S, Purdue, 41; M.S, Kentucky, 43; Ph.D, Cincinnati, 47. U. S. Dept. Army, proj. ch, 46-.

EIGENMANN, Carl H., *Zoology* (starred). Flehingen, Germany, 3/9/63, died, 27; m. 87, c. 4. A.B, Indiana, 86, A.M, 87, Ph.D, 89. Indiana, 91-27, dir. biol. sta, 95-27, dean grad. sch, 08-27. Ind. Acad. Sci. (pres, 99), Natl. Acad. Sci. Fishes; degeneration in cave vertebrates; freshwater fishes of tropical America.

EIGSTI, O(rie) J(acob), *Botany.* Morton, Ill, 7/23/08. A.B, Goshen Col, 31; A.M, Illinois, 33, Ph.D, 35. Oklahoma, 38-, assoc. prof, 41-.

EISELE, C(harles) Wesley, *Medicine.* New Albany, Ind, 4/6/06; m. 33, c. 2. B.A, North Central Col, 28; M.S, Northwestern, 31, M.B, 32, M.D, 33. Chicago, 34-, assoc. prof, 45-.

ELBEL, Edwin Robert, *Physical education.* South Bend, Ind, 11/24/95; m. 22, c. 3. B.P.E, Springfield Col, 20, M.P.E, 27; B.S, Ottawa (Kans.), 25; Ph.D, Iowa, 38. Kansas, 28-, prof, 46-.

ELBINGER, Rebecca L(eash), *Chemistry.* Detroit, Mich, 11/17/21; m. 45. B.S, Wayne, 42, M.S, 43; Ph.D, Indiana, 46. Illinois, col. med, 48-.

ELBOURN, Robert D(arling), *Electrical engineering.* Indianapolis, Ind, 10/5/19. B.S, Purdue, 40, M.S, 49. U. S. Bur. Standards, 47-.

ELDER, J(ames) H(arlan), *Psychology.* Marshall, Ind, 9/24/02; m. 26, c. 3. A.B, Colorado, 30; Ph.D, Yale, 33. Tennessee, prof, 46-.

ELDRED, Frank R(andall), *Chemistry.* Ligonier, Ind, 10/21/74, died, 45. Ph.C, Purdue, 97; Phar.D, Medico-Chirurg. Col. Phila, 13. Purdue, 99-01; Eli Lilly & Co, 01-, dir. sci. div, 09-20.

ELIASON, Everett J., *Forestry.* Richmond, Ind, 3/1/01; m. 29, c. 2. B.S, Purdue, 23; M.S, Syracuse, 25. State Cons. Dept, N. Y, 29-49, supervising forester, 45-49.

ELIEL, Ernest L(udwig), *Organic chemistry.* Cologne, Germany, 12/28/21. Ph.D, Illinois, 48. Notre Dame, instr, 48-.

ELKINS, Robert H(iatt), *Chemistry.* Marion, Ind, 10/2/18. A.B, DePauw, 40; Ph.D, West. Reserve, 45.

ELL, Carl S(tephens), *Engineering.* Staunton, Ind, 11/14/87; m. 13, c. 1. A.B, DePauw, 09, hon. Sc.D, 34; S.B, Mass. Inst. Tech, 11, M.S, 12; Ed.M, Harvard, 32. Northeastern, 10-, dean, 17-40, v. p, 25-40, pres, 40-.

ELLER, C(harles) Howe, *Epidemiology, Public health administration.* Bloomington, Ind, 6/5/04; m. 33, c. 2. A.B, Stanford, 27; M.D, Colorado, 30; Dr.P.H, Hopkins, 34. Dir. east. health dist, Baltimore, 37-46; Louisville, prof, 49-.

ELLIKER, P(aul) R(euben), *Dairy bacteriology.* La Crosse, Wis, 2/12/11. B.S, Wisconsin, 34, M.S, 35, Ph.D, 37. Purdue, 40-, assoc. prof, 42-.

ELLINGSON, R(udolph) C(onrad), *Organic chemistry.* Madison, Wis, 3/8/11; m. 39, c. 1. B.A, St. Olaf Col, 33; Ph.D, Hopkins, 38. Mead Johnson & Co, 39-.

ELLIOTT, Ben(jamin) G(eorge), *Engineering.* North Platte, Nebr, 2/17/89. B.S, Rose Poly. Inst, 10, M.S, 11; M.E, Wisconsin, 13. Wisconsin, 17-, prof, 19-.

ELLIOTT, Daniel R., *Physics.* Hillsdale, Mich, 12/16/14; m. 39, c. 4. B.S, Hillsdale Col, 36; Ph.D, Purdue, 41. U. S. Rubber Co, 41-.

ELLIOTT, Ebenezer Newton, *Mathematics.* Chester, S. C, 1805, died, 90. A.B, Marion Col, 30. Indiana, prof, 1832-36; Mississippi Col, pres, 36-.

ELLIOTT, Edward C(harles), *Education.* Chicago, Ill, 12/21/74; m, c. 4. B.Sc, Nebraska, 95, M.A, 97; Ph.D, Columbia, 05. Purdue, pres, 22-45.

ELLIOTT, F(rank) R(oy), *Zoology.* Spartansburg, Ind, 5/19/88; m. 16, c. 2. B.S, Earlham Col, 11, A.M, 12; Ph.D, Ohio State, 29. Earlham Col, asst. prof, 19-24, 28-29; Valparaiso, prof, 29-. Spiders of Indiana.

ELLIOTT, S(eth) E(arl), *Physics.* Miller, S. Dak. A.B, Morningside Col, 12; M.S, Iowa, 15; Ph.D, Indiana, 31. Butler, prof, 24-.

ELLIS, Charles A(lton), *Civil engineering.* Parkman, Me, 6/23/76; m. 13. A.B, Wesleyan, 00; C.E, Illinois, 22. Purdue, prof, 34-46.

ELLIS, M(ax) M(apes), *Physiology.* Lawrence, Ind, 12/3/87; m. 09, c. 1. A.B, Indiana, 07, A.M, 08, Ph.D, 11. Vincennes, prof, 08-09; Missouri, 19-, prof, 27-, chm. dept, 36-.

ELLIS, Nathan Kent, *Horticulture.* Maple Rapids, Mich, 1/14/09; m. 34, c. 3. B.S, Mich. State Col, 32, M.S, 35. Purdue, 35-, assoc. prof, 47-. Muck crops.

ELLITHORN, Harold E(dward), *Electrical engineering.* Detroit, Mich, 10/11/11; m. 38, c. 1. B.S, Union Col. (N. Y.), 34; M.S, Harvard, 35; Ph.D, Notre Dame, 45. Notre Dame, 40-, assoc. prof, 46-.

ELLSON, Douglas G(eorge), *Psychology.* Stafford, Eng, 7/12/13; m. 34, c. 2. A.B, Miami (O.), 35; Ph.D, Yale, 39. Indiana, prof, 45-, chm. dept, 48-.

ELROD, Moses N(ewton), *Geology.* Orange Co, Ind, 1838. State geol, Ind, 75, 81-84, 91-94.

ELVING, Philip J(uliber), *Analytical chemistry.* Brooklyn, N. Y, 3/14/13; m. 37, c. 2. A.B, Princeton, 34, A.M, 35, Ph.D, 37. Purdue, 39-49, assoc. prof, 47-49.

EMERSON, Charles P(hillips), *Medicine.* Methuen, Mass, 9/4/72, died, 39; m. 09, c. 5. A.B, Amherst Col, 94, M.D, Hopkins, 99. Indiana, dean sch. med, 11-32.

EMERSON, Charles Phillips, Jr, *Medicine.* Indianapolis, Ind, 6/3/12; m. 41, c. 3. A.B, Princeton, 33; M.D, Harvard, 37. Boston, asst. prof, 46-.

EMERSON, Fred W(ilbert), *Botany.* Georgetown, Ill, 2/8/86; m. 14, c. 2. B.S, Earlham Col, 13; M.S, Chicago, 18, Ph.D, 21. Earlham Col, 13-30, prof, 27-30; N. Mex. Highlands U, prof, 30-.

EMERY, W(illiam) O(rrin), *Chemistry.* Vernon, Vt, 3/29/63, died, 46. B.S, Worcester Poly. Inst, 85; Ph.D, Erlangen, 88. Wabash Col, prof, 95-01; U. S. Dept. Agr, 08-33.

EMIK, L(eon) Otis, *Genetics.* Columbus, Ind, 3/19/13; m. 35, c. 2. A.B, Stanford, 35; M.A, California, 37, Ph.D, 43. U. S. Dept. Agr, 41-.

EMLING, Bertin L(eo), *Organic chemistry.* Erie, Pa, 7/9/05. A.B, St. Vincent Col, 31; M.A, Hopkins, 38; Ph.D, Notre Dame, 41. St. Vincent Col, 37-.

EMMICK, Robert D., *Organic chemistry.* Holland, Mich, 8/13/20; m. 45, c. 2. A.B, Hope Col, 42; Ph.D, Illinois, 46. Dupont Co. (Ind.), 46-.

EMMONS, Lloyd C(lement), *Mathematics.* Lawrenceville, Ill, 5/4/87; m. 09, c. 3. B.S, Central Nor. Col, 07; A.B, Indiana, 09; A.M, Harvard, 17. Mich. State Col, 13-, prof, 25-.

ENDERS, Howard E(dwin), *Zoology.* Enders, Pa, 6/18/77; m. 01, c. 3. B.S, Lebanon Valley Col, 97, M.S, 00; B.S, Michigan, 98; Ph.D, Hopkins, 06. Purdue, 06-47, prof, 20-47, dean sch. sci, 32-37. Ind. Acad. Sci. (pres, 21). Annulata; food of fledgling birds, commensalism; parasitology.

ENDSLEY, Louis E(ugene), *Railway engineering.* Wayne Co, Ind, 9/9/79. B.S, Purdue, 01, M.E, 03. Purdue, 02-14, prof, 12-14; Pittsburgh, prof, 14-.

ENGELS, William L(ouis), *Zoology.* Green Bay, Wis, 10/28/05; m. 45. B.S, Notre Dame, 30; Ph.D, California, 37. Notre Dame, 29-32, instr, 30-32; North Carolina, 37-, assoc. prof, 41-.

ENOS, George M(agee), *Metallurgy.* Dubuque, Ia, 7/8/96; m. 24, c. 2. B.S, S. Dak. Sch. Mines, 21, Met.E, 22; M.S, Carnegie Inst. Tech, 22; Ph.D, Cincinnati, 25. Purdue, prof, 46-.

ENZ, W(alter) W(illiam) F(red), *Plant chemistry.* Ft. Wayne, Ind, 4/29/05. B.S, Purdue, 27, M.S, Florida, 29; Ph.D, Wisconsin, 31. Purdue, asst. prof, 31-32; Upjohn Co, 32-.

ERB, R(alph) E(ugene), *Dairy husbandry.* Dow, Ill, 5/28/17; m. 41. B.S, Illinois, 40; M.S, Purdue, 42, Ph.D, 47. Purdue, 40-47, instr, 46-47; State Col. Wash, assoc. prof, 47-.

ERVIN, Robert F(rancis), *Bacteriology.* Jackson, O, 12/28/13; m. 40, c. 3. B.S, Notre Dame, 36, M.S, 38. Notre Dame, 39-, assoc. res. prof, 49-.

ESAREY, Ralph E(merson), *Economic geology.* Cannelton, Ind, 4/25/01. A.B, Indiana, 22, A.M, 23. Indiana, instr. to assoc. prof, 24-; state geol, Ind, 36-46.

ESSENBERG, J(acob) M(artin), *Anatomy.* Courland, Latvia, 3/22/83, nat, 13; m. 15, c. 2. B.Pd, B.S, Valparaiso, 13; Ph.D, Chicago, 22. Valparaiso, asst. prof, 13-18; Chicago, prof. med. sch, 43-.

ESSEX, Jesse L(yle), *Chemistry.* Lebanon, Ind, 10/24/90; m. 14, c. 1. A.B, Wabash Col, 14; M.S, Purdue, 17. Wabash Col, instr, 14-15; Purdue, instr, 15-17. Standard Oil Co. Ind, 22-24.

ESSIG, E(dward) O(liver), *Entomology.* Arcadia, Ind, 9/29/84; m. 10, c. 1. B.S, Pomona Col, 09, M.S, 12; California, 14-, prof, 28-.

ESTABROOK, Gaylord B(eale), *Physics.* Logansport, Ind, 10/9/99; m. 26. B.S, Purdue, 21; M.S, Ohio State, 22; Ph.D, Pittsburgh, 32. Maryland, 37-, assoc. prof, 47-.

ESTES, William K(aye), *Psychology.* Minneapolis, Minn, 6/17/19; m. 42, c. 2. B.A, Minnesota, 40, Ph.D, 43. Indiana, 46-, assoc. prof, 49-.

EVANS, Chester E(ugene), *Psychology.* Harrison Co, Ind, 7/16/15; m. 40, c. 2. B.S, Ohio (Athens), 38; M.A, Wayne, 43; Ph.D, Ohio State, 45. Wayne, asst. prof, 47-.

EVANS, G(eo) Harlowe, *Physical chemistry.* Dallas, Tex, 12/12/03. B.S, Michigan, 25, M.S, 26, Ph.D, 34. Taylor, prof, 33-41; Huntingdon Col, prof, 41-.

EVANS, J(ohn) E(llis), *Psychology.* Brazil, Ind, 1/1/82. A.B, Indiana, 10, A.M, 11; Ph.D, Columbia, 16. Iowa State Col, prof, 22-.

EVANS, Latimer R(ichard), *Chemistry.* Washington, D. C, 11/4/18; m, c. 1. B.S, American, 41; Ph.D, Purdue, 45. Dupont Co, 46-.

EVANS, Percy N(orton), *Chemistry.* Montreal, Can, 9/6/69, died, 25. B.S, McGill, 90; Ph.D, Leipzig, 93. Purdue, 95-, prof. and dir. chem. dept, 00-25. Ind. Acad. Sci. (pres, 10).

EVANS, Richard I., *Botany.* Ft. Wayne, Ind, 6/24/02. B.S, Purdue, 26; M.S, Wisconsin, 28, Ph.D, 31. Wisconsin, 31-, assoc. prof, 47-.

EVANS, Walter H(arrison), *Botany.* Delphi, Ind, 1/3/63, died, 41. A.B, Wabash Col, 87, A.M, 89, Ph.D, 96. Wabash, instr, 88-90; Eli Lilly & Co, 90-91; U. S. Dept. Agr, 92-.

EVERETT, James R(oy), *Mathematics.* Brownsburg, Ind, 8/22/85; m. 13, c. 1. A.B, Ind. State Nor. Sch, 15; A.M, Wisconsin, 16. Colo. Sch. Mines, 22-, prof, 47-.

EVERING, B(ernard) L(ewis), *Chemistry.* Baltimore, Md, 9/22/08; m. 35, c. 1. A.B, Loyola Col. (Md.), 30; Ph.D, Hopkins, 34. Standard Oil Co. Ind, 34-.

EVERLY, Ray T(homas), *Entomology.* St. Joseph, Mo, 8/29/02; m. 29, c. 2. B.Sc, Ohio State, 28, M.Sc, 35. Purdue, asst. prof, 48-.

EVERMANN, Barton W(arren), *Ichthyology* (starred), *Biology.* Monroe Co, Ia, 10/24/53, died, 32; m. 75, c. 2. B.S, Indiana, 86, A.M, 88, Ph.D, 91. Ind. pub. schs, 71-79; Ind. State Nor. Sch, prof, 86-91; U. S. Natl. Museum, curator fisheries, 05-14; Calif. Acad, dir. museum, 14-32. Fishes of North and Middle America (with D. S. Jordan) and Hawaii; physical and biological survey of Lake Maxinkuckee, Ind.

EWAN, Maurice A(lbertson), *Chemistry.* Morocco, Ind, 7/3/13; m. 37, c. 3. B.S, Purdue, 36. Purdue, 42-46; Cent. Soya Co. (Ind.), 46-49.

EWELL, R(aymond) H(enry), *Chemistry.* Brockton, Mass, 6/18/08; m. 45, c. 1. B.S, Toledo, 28; M.S, Purdue, 35; M.A, Geo. Washington, 35; Ph.D, Princeton, 37. Purdue, 28-41, instr, 37-39, asst. prof, 39-41.

EWING, Douglas H(ancock), *Physics.* Mitchell, Ind, 6/24/15; m. 38, c. 3. B.S, Butler, 35; M.S, Rochester, 37, Ph.D, 39. Smith Col, 39-45.

EWING, D(ressel) D(ewitt), *Electrical engineering.* Vanlue, O, 10/7/83; m. 06, c. 1. E.E, Ohio Northern, 05, M.E, 06. Purdue, 13-, prof, 18-, head sch. elec. eng, 42-.

EWING, Thomas N(ewell), *Social psychology.* Decatur, Ill, 11/6/13; m. 41, c. 1. A.B, DePauw, 35; A.M, Syracuse, 37; Ph.D, Duke, 40. Illinois, asst. prof, 46-.

EWING, Warren W(alter), *Physical chemistry.* Winterset, Ia, 11/4/89; m. 28, c. 1. B.S, Parsons Col, 12; M.S, Chicago, 18, Ph.D, 20. Ind. high schs, 12-16; Lehigh, 20-, prof, 37-.

EYRE, Thomas T(aylor), *Engineering.* Dolington, Pa, 1/8/83; m. 07, c. 1. B.S, Purdue, 05, M.E, 27. Purdue, 05-20, asst. prof, 14-17-20; South. California, prof, 26-.

FADUM, Ralph E(igil), *Soil mechanics.* Pittsburgh, Pa, 7/19/12; m. 39, c. 1. B.S, Illinois, 35; M.S, Harvard, 37, Sc.D, 41. Purdue, 43-49, prof, 47-49.

FAGAN, F(rank) N(elson), *Horticulture.* Richmond, Ind, 9/29/88. B.S, Ohio State, 10. Pa. State Col, asst. prof. to prof, 12-48.

FAILEY, Crawford Fairbanks, *Chemistry.* Terre Haute, Ind, 1/30/00; m. 37. Ph.B, Yale, 21; Ph.D, California, 26. Chicago, 42-, prof, 47-.

FAINMAN, M(orton) Z., *Organic chemistry.* Chicago, Ill, 4/18/16; m. 41. S.B, Chicago, 37, Ph.D, 41. Standard Oil Co. Ind, 46-.

FAIR, Fred C(harles), *Metallography*. Red Key, Ind, 2/7/97. B.S, Carnegie Inst. Tech, 19; M.A, Columbia, 23; Ph.D, N. Y. U, 34. Cent. Ry. Signal Co. (Ind.), 20-22; N. Y. U, 24-45, asst. prof, 42-45.

FAIRCHILD, C(harles) Owen, *Physics*. Marinette, Wis, 2/27/90; m. 20. B.S, Rose Poly. Inst, 12, M.S, 20. C. J. Tagliabue Mfg. Co. (Brooklyn), dir. res, 26-46.

FAIRMAN, Seibert, *Mechanics*. Wakefield, Kan, 9/12/96; m. 21, c. 3. B.S, Kans. State Col, 19, M.E, 24; M.S, Purdue, 23. Purdue, 21-, prof, 40-.

FALKOFF, David L(eo), *Physics*. Rochester, N. Y, 3/24/21; m. 42, c. 3. B.A, Rochester, 42; Ph.D, Michigan, 48. Notre Dame, asst. prof, 48-.

FALL, Paul H(enry), *Physical chemistry*. Fountain City, Ind, 5/8/92; m. 16, c. 2. A.B, Oberlin Col, 14, M.A, 18; Ph.D, Cornell, 25. Hiram Col, 20-, prof, 20-36, pres, 40-.

FAN, Ky, *Mathematics*. Hangchow, China, 9/19/14; m. 36. B.S, Natl. U. Peking, 36; D.Sc, Paris, 41. Notre Dame, 47-, assoc. prof, 49-.

FANCHER, Otis E., *Chemistry*. McCool, Miss, 1/17/16; m. 46. B.S, Miss. State Col, 38; Ph.D, Northwestern, 42. Miles Labs. (Elkhart, Ind.), head org. res, 47-.

FARRIS, Marshall Elmer, *Mechnical engineering*. Cabool, Tex, 8/16/95; m, c. 2. B.S, Purdue, 22; M.S, Texas, 26. New Mexico, dean col. eng, 31-.

FAUCETT, Max Albert, *Electrical engineering*. Tangier, Ind; m. 23. B.S, Rose Poly. Inst, 21, M.S, 24; M.S, Illinois, 28, E.E, 29. Illinois, 22-, assoc. prof, 43-46, prof, 46-.

FAUGHT, J(ohn) B(rookie), *Mathematics*. Oaktown, Ind, 2/28/63, died, 32. A.B, Indiana, 93, A.M, 95; Ph.D, Pennsylvania, 99. Vincennes, prof, 93-94; Indiana, asst. prof, 94-00; Yankton Col, prof, 20-32.

FAY, Paul J(ohnson), *Psychology*. Canisteo, N. Y, 4/19/98. B.S, Ohio State, 23, Ph.D, 30; A.M, Columbia, 27. DePauw, 31-45, prof, 41-45; U. S. Veterans Admin. (Indianapolis reg. off.), 46-.

FEASLEY, C(harles) F(rederick), *Organic chemistry*. Lexington, Ill, 1/21/15; m. 40, c. 2. A.B, Hanover Col, 37; M.S, Purdue, 40, Ph.D, 42. Socony-Vacuum Oil Co, 41-, sr. chem, 45-.

FEATHERSTONE, R(obert) M(arion), *Pharmacology*. Anderson, Ind, 12/24/14; m. 40, c. 2. B.A, Ball State Teachers Col, 40; M.S, Iowa, 42, Ph.D, 43. Iowa, asst. prof, 46-.

FEIN, Louis, *Physics*. N. Y. C, 10/1/17; m. 42, c. 3. B.S, Long Island, 38; M.S, Colorado, 41; Ph.D, Brown, 47. Earlham Col, instr, 41-43.

FEINSTONE, W(olffe) Harry, *Bacteriology*. Pultusk, Poland, 10/1/13, nat. 20; m. 38, c. 3. B.S, Arkansas, 36; Sc.D, Hopkins, 39. Cent. Pharmacal Co. (Seymour, Ind.), dir. res, 47-.

FELDMAN, Horace W(enger), *Agricultural statistics*. South Bend, Ind, 3/22/99; m. 25, c. 2. B.S.A, Purdue, 21; M.S, Illinois, 22; S.M, Harvard, 23, Sc.D, 25. Bendix Aviation Corp, 43-.

FELDMAN, William, *Physics*. New London, Conn, 9/15/17. B.S, Purdue, 39; Ph.D, Pennsylvania, 42. Eastman Kodak, 45-.

FELDMEIER, Joseph R(obert), *Physics*. Niles, O, 2/17/16; m. 42, c. 2. B.S, Carnegie Inst. Tech, 38; M.S, Notre Dame, 40, Ph.D, 42. Col. St. Thomas, assoc. prof, 48-.

FELGER, Maurice M(onroe), *Chemistry*. Ft. Wayne, Ind, 2/5/08; m. 33, c. 3. A.B, Indiana, 30, A.M, 31, Ph.D, 33. Indiana, exten. div, 33-41, asst. prof. (Ft. Wayne cent.), 39-41; Gen. Elec. (Ft. Wayne), 45-.

FELTON, George (Edwin), *Chemistry*. Eldora, Ia, 5/22/09. B.S, Iowa State Col, 31, M.S, 33, Ph.D, 35. Am. Maize Prods. Co. (Ind.), 38-.

FENIMORE, H(arold) Emory, *Chemistry*. Economy, Ind, 11/7/98; m. 31, c. 2. A.B, Indiana, 24; A.M, Wisconsin, 26; Ph.D, Pennsylvania, 28. Ind. Steel & Wire Co. (Muncie), 41-.

FENSKE, M(errell) R(obert), *Chemistry* (starred), *Chemical engineering*. Michigan City, Ind, 6/5/04. A.B, DePauw, 25; Sc.D, Mass. Inst. Tech, 28. Pa. State Col, 29-, prof, 36-.

FERENCE, Michael, Jr, *Physics*. Whiting, Ind, 11/6/11; m. 37, c. 5. B.S, Chicago, 33, M.A, 34, Ph.D, 37. Chicago, 37-46, assoc. prof, 44-46; U. S. Sig. Corps, eng. labs, ch. meteorol. branch, 46-.

FERGUSON, A(rthur) N(ewton), *Histology*. Mercer, Mo, 7/2/97; m, c. 2. B.S, Chicago, 23, M.S, 25; M.D, Rush, 29; Ph.D, Northwestern, 27. Duemling Clinic (Ft. Wayne), 17-19, 42-45.

FERGUSON, James W(illiams), *Chemistry*. Camden, O, 4/9/08; m. 31, c. 3. A.B, Miami (O.), 29; A.M, Oberlin Col, 31; Ph.D, Michigan, 34. Eli Lilly & Co, 42-48; Butler, assoc. prof, 48-.

FERGUSON, L(loyd) C., *Veterinary science, Genetics*. Lebanon, Ind, 9/10/12; m. 35, c. 1. D.V.M, Ohio State, 34; M.S, Wisconsin, 36, Ph.D, 40. Ohio State, asst. prof. bact, 46-.

FERNELIUS, W(illis) Conrad, *Chemistry.* Riverdale, Ut, 8/7/05. A.B, Stanford, 26, A.M, 27, Ph.D, 28. Purdue, prof, 42-.

FERRIS, W(arren) R(obert), *Electrical engineering.* Terre Haute, Ind, 5/14/04; m. B.S, Rose Poly. Inst, 27; M.S, Union Col. (N. Y.), 32; D.E, Poly. Inst. Brooklyn, 46. Naval Res. Lab. (Wash, D. C.), 46-.

FERRY, E(rvin) S(idney), *Physics* (starred). Croydon, N. H, 6/14/68. B.S, Cornell, 89. Purdue, prof, 99-33.

FETZER, W(alter) R(aymond), *Physical chemistry.* Russelville, Ind, 7/13/95; m. 23, c. 1. B.A, Nebr. Wesleyan, 17; M.A, Toronto, 19, Ph.D, 22. Clinton Industs, 43-.

FEUER, Henry, *Organic chemistry.* Stanislau, Poland, 4/4/12, nat, 47; m. 46. M.S, Vienna, 34, Ph.D, 37. Purdue, asst. prof, 46-.

FICHT, George Augustus, *Entomology.* Vandecar, Ont, Can, 11/27/00, died, 41. B.S.A, Toronto, 23; M.A, West. Ontario, 26. Purdue, exp. sta, 27-41.

FICK, Nat(haniel) C(row), *Metallurgy.* Lake Wawasee, Ind, 7/13/13; m. 40, c. 4. B.S, Butler, 35; M.S, Purdue, 38. Carnegie-Ill. Steel Corp. (Ind.), 41-42.

FICKEN, Frederick A(rthur), *Mathematics.* Moore's Hill, Ind, 8/13/10; m. 40, c. 1. B.A, Oberlin Col, 31; M.A, Ohio State, 32; B.A, Oxon, 34 (Rhodes scholar); Ph.D, Princeton, 38. Tennessee, prof, 42-.

FIDLAR, M(arion) M(oore), *Geology.* Vincennes, Ind, 6/7/09; m. 37. A.B, Indiana, 34, M.A, 36, Ph.D, 42. Asst. state geol, Ind, 36-38; Mountain Fuel Supply Co, 43-, ch. geol. 45-.

FIELD, Hugh W(illiam), *Chemical engineering.* Indianapolis, Ind, 8/21/06; m. 30, c. 2. B.S, Pennsylvania, 28. Atlantic Ref. Co, 28-, res. mgr, 47-.

FIELD, Robert W., *Industrial engineering.* Auburn, Me, 1/23/11; m. 37, c. 2. B.S, Colorado, 34; M.S, Illinois, 35, Ph.D, 37. Purdue, 42-, prof, 49-.

FIELDS, K(enneth) E., *Soil mechanics.* Elkhart, Ind, 2/1/09; m. 34, c. 3. B.S, U. S. Mil. Acad, 33; M.S, Mass. Inst. Tech, 38. U. S. Waterways Exp. Sta. (Miss.), dir. studies, 39-42; U. S. Atomic Energy Comn, 47-.

FIELDS, Melvin, *Organic chemistry.* Muncie, Ind, 6/30/20; m. 40. B.S, Harvard, 42, M.S, 43, Ph.D, 44. U. S. Tracer Lab, dir. div, 48-.

FIELDS, Paul E(ldon), *Psychology.* Gallipolis, O, 1/5/05; m. 26. A.B, Ohio Wesleyan, 26, A.M, 27; Ph.D, Ohio State, 30. Wabash Col, head dept, 47-.

FIESENHEISER, E(lmer) I(rving), *Structural engineering.* South Bend, Ind, 8/4/06; m, c. 1. B.S, Purdue, 30, C.E, 45; M.S, Ill. Inst. Tech, 46. Ill. Inst. Tech, assoc. prof, 43-.

FILAR, Leo J(ohn), *Chemistry.* Wilkes Barre, Pa, 2/8/17. B.S, Scranton, 39; Ph.D, Purdue, 48. Hercules Powder Co, 47-.

FINCH, Glen, *Psychology.* Portland, Ind, 10/23/09. A.B, DePauw, 30; A.M, Illinois, 31, Ph.D, 35. U. S. Air Force, 42-.

FINE, Nathan J(acob), *Mathematics.* Philadelphia, Pa, 10/22/16; m. 43. B.S, Temple, 36; A.M, Pennsylvania, 39, Ph.D, 46. Purdue, 42-44; Naval Ordnance Plant (Ind.), 44-45; Pennsylvania, asst. prof, 47-.

FINHOLT, R(obert) W(ilton), *Chemistry.* Chicago, Ill, 7/8/21; m. 45. A.B, Knox Col, 42; Ph.D, Purdue, 47. Union Col, asst. prof, 46-.

FINK, Dale F(loyd), *Chemistry.* Seymour, Ind, 10/30/19; m. 44, c. 2. B.S, Indiana, 41. Shell Oil Co, 41-.

FINK, G(ail) J., *Chemistry.* Yountsville, Ind, 6/19/87. A.B, Wabash Col, 09; Ph.D, Cornell, 14. U. S. Gypsum Co, super. res, 41-.

FINK, W(illia)m L(a Villa), *Physical metallurgy.* Fairmount, Ind, 9/14/96; m. 26, c. 2. B.S.E, Michigan, 21, M.S.E, 23, Ph.D, 26. Aluminum Co. Am, res. labs, 25-, ch. div, 43-.

FISCHBACH, Henry, *Chemistry.* N. Y. C, 5/2/14; m. 35, c. 2. A.B, Indiana, 35, A.M, 36, Ph.D, 38. U. S. Food & Drug Admin, 39-, in chg. res. antibiotics, 45-.

FISCHER, George W(illiam), *Plant pathology.* Indianapolis, Ind, 4/30/06; m. 28, c. 5. B.S, Butler, 28; M.S, Northwestern, 29; Ph.D, Michigan, 34. Butler, instr, 29-30; State Col. Wash, prof, 45-.

FISCHER, Robert B(lanchard), *Chemistry.* Hartford, Conn, 10/24/20; m. 46, c. 1. B.S, Wheaton Col. (Ill.), 42; Ph.D, Illinois, 46. Indiana, asst. prof, 48-.

FISHER, C(atherine) Virginia, *Medical bacteriology.* Valparaiso, Ind, 6/10/08; m. 43. A.B, Wisconsin, 29; M.S, Illinois, 31, Ph.D, 34. Maltine Co, assoc. med. dir, 45-.

FISHER, Edna M(arie), *Zoology.* Riverside, Ind. A.B, California, 20, M.A, 21. San Francisco State Col, 30-, assoc. prof, 41-.

FISHER, F(loyd) G(rayson), *Mathematics.* Markle, Ind, 3/15/10; m. 38, c. 3. A.B, California, 32, M.A, 33, Ph.D, 37. U. S. N. Electronics Lab, 47-.

FISHER, G(eorge) A(lbert), *Chemistry.* Selinsgrove, Pa, 90. Ph.C, Medico-Chirurg. Col. Phila, 11, Phar.D, 14; Sc.D, Susquehanna, 22. Van Camp Packing Co. (Indianapolis), dir. res, 12-35.

FISHER, L(awrence) E(lbert), *Electrical engineering.* Sweetser, Ind, 3/31/05; m. 30, c. 1. B.S, Michigan, 27. Bulldog Elec. Prods. Co, dir. res, 34-.

FISHER, L(oyal) W(itherow), *Serology, Immunology.* Rossville, Ind, 6/30/96; m. 41. B.S, Purdue, 18, Ph.D, 31. Legumogen Labs, Inc. (Delphi, Ind.), 35-.

FISHER, Lyman C(arlyle), *Mechanical engineering.* Marion, Ind, 6/30/09; m. 34, c. 1. B.S, Michigan, 32, M.S, 33. Michigan, 36-40; U. S. Naval Ordnance Lab, 41-, assoc. ch. res. dept, 46-.

FISHER, M(artin) L(uther), *Agriculture.* Near Murray, Ind, 10/24/71, died, 42. B.S, Purdue, 03; M.S, Wisconsin, 11. Purdue, prof, 10-40, dean men, 26-40. Ind. Acad. Sci. (v. p, 34).

FISK, Henry G(runsky), *Mineral technology.* San Francisco, Calif, 4/26/01; m. 34, c. 2. B.S, Occidental Col, 23; M.S, Illinois, 24; Ph.D, Ohio State, 27. Universal Atlas Cement Co. (Ind.), petrographer, 28-36.

FITCH, James Burgess, *Dairy husbandry.* Hunterton, Ind, 6/26/88; m. 12, c. 3. B.S, Purdue, 10; M.S, Kans. State Col, 35. Kans. State, prof, 18-35; Minnesota, prof, 35-.

FITTERER, G(eorge) R(aymond), *Metallurgy.* Newark, O, 4/10/01; m. 25, c. 1. B.S, Rose Poly. Inst, 24; M.S, Carnegie Inst. Tech, 27; Ph.D, Pittsburgh, 30. Am. Chain Co. (Ind.), 24-25; U. S. Bur. Mines, 27-33, head dept. metal, 31-33.

FITZGERALD, Dorothea M(ary), *Chemistry.* Syracuse, N. Y, 5/14/01. B.S, Syracuse, 24, M.S, 26, Ph.D, 33. St. Mary-of-the-Woods Col, prof, 37-41.

FITZPATRICK, H(arry) M(orton), *Botany* (starred), *Mycology.* Greenwood, Ind, 6/27/86; m. 13, c. 2. A.B, Cornell, 09, Ph.D, 13. Cornell, 08-, prof, 22-.

FITZPATRICK, John P(atrick), *Chemistry.* Chicago, Ill, 10/9/12. B.S, Notre Dame, 35. Argonne Natl. Lab, 46-.

FITZ-SIMONS, Ogden, *Chemical engineering.* Rochester, N. Y, 6/1/06; m. 33, c. 3. B.S, Rochester, 27; S.M, Mass. Inst. Tech, 29. Standard Oil Co. Ind, 29-35.

FIX, Philip F(orsyth), *Geology.* Indianapolis, Ind, 6/25/08; m. 30. A.B, Indiana, 29, A.M, 31; Ph.D, Colorado, 40. U. S. Geol. Surv, 42-.

FLATHER, J(ohn) J(oseph), *Mechanical engineering.* Philadelphia, Pa, 6/9/62; died, 26. Ph.B, Yale, 85; M.M.E, Cornell, 90. Purdue, prof, 91-98; Minnesota, head dept, 98-.

FLEETWOOD, Charles Wesley, *Chemistry.* Gent, Ind, 11/10/04; m. 39, c. 1. A.B, Hanover Col, 30; M.S, St. Louis, 32, Ph.D, 37. U. S. Rubber Co. (Indianapolis), 37-41; N. Dak. Agr. Col, prof, 46-.

FLEMION, Florence (Mrs. Lawrence P. Miller), *Physiology.* Colfax, Ind, 6/21/03; m. 35. A.B, Indiana, 26. Boyce Thompson Inst, 27-47.

FLEMMING, Cecile White (Mrs. E. G.), *Psychology.* Anderson, Ind, 6/13/89. A.B, Indiana, 13, A.M, 15; Ph.D, Columbia, 26. Indiana, instr, 15-17.

FLETCHER, Hazel Marie, *Physics.* Economy, Ind, 11/28/97. A.B, Indiana, 22, A.M, 27, Ph.D, 29. Ind. pub. schs, 16-19, high schs, 22-27; Kans. State Col, asst. prof, 37-44; U. S. Dept. Agr, 44-.

FLETCHER, Worth A(lbert), *Chemistry.* Randolph Co, Ind, 5/8/00; m. 31, c. 1. A.B, Indiana, 25, A.M, 26, Ph.D, 27. Munic. U. Wichita, 27-, prof, 31-.

FLETEMEYER, Louis Henry (Jr), *Electrical engineering.* N. Y. C, 12/12/06; m. 31, c. 2. B.S, Purdue, 30, E.E, 35. Dupont Co, 30-, asst. plant mgr, 46-.

FLINT, George W., *Chemistry.* Bellflower, Ill, 7/30/05; m. 31, c. 1. A.B, Illinois, 27. Standard Oil Co. Ind, 29-.

FLOE, Carl F(rederick), *Metallurgy.* Dawson, Yukon, Can, 1/1/08, nat, 16; m. 35, c. 2. B.S, State Col. Wash, 30, M.S, 32; Sc.D, Mass. Inst. Tech, 35. Notre Dame, asst. prof, 36-39; Mass. Inst. Tech, 39-.

FLORENTINE, Sister M. (Mary Theresa Daly), *Chemistry.* Philo, Ill, 4/13/90, died, 39. A.B, Notre Dame, 18, M.A, 24, Ph.D, 31. St. Mary's Col, prof, 30-39.

FLORESTANO, H(erbert) J(oseph), *Chemotherapy.* Annapolis, Md, 7/23/12; m. 42, c. 1. A.B, St. John's Col. (Md.), 34; M.S, Maryland, 37, Ph.D, 40. Pitman-Moore Co. (Indianapolis), 43-.

FLORY, Charles David, *Clinical and educational psychology.* Nokesville, Va, 9/28/02; m. 25, c. 2. A.B, Manchester Col, 24; A.M, Chicago, 28, Ph.D, 33. Ind. high schs, 24-27.

FLORY, Paul J(ohn), *Physical chemistry* (starred). Sterling, Ill, 6/19/10; m. 36, c. 3. B.S, Manchester Col, 31; M.S, Ohio State, 31, Ph.D, 34. Cornell, prof, 48-.

FLOYD, B(ayard) F(ranklin), *Botany.* Kempton, Ind, 3/18/82, died, 45. A.B, Indiana, 05; A.M, Missouri, 07. Florida exp. sta, 07-20.

FLOYD, W(illis) W(aldo), *Organic and physical chemistry.* Whitesboro, Tex, 8/2/03; m. 32, c. 4. A.B, N. Tex. State Teachers Col, 25; A.M, Texas, 28; Ph.D, Iowa, 31. Purdue, prof, 47-.

FOCKE, Arthur E(ldrige), *Metallurgy.* Cleveland, O, 6/17/04; m. B.Met.E, Ohio State, 25, M.S, 26, Ph.D, 28. Diamond Chain & Mfg. Co. (Indianapolis), 30-, ch. div, 45-.

FOERSTE, August Frederick, *Paleontology* (starred). Dayton, O, 5/7/62, died, 36. A.B, Denison, 87; A.M, Harvard, 88, Ph.D, 90. Ind. Geol. Surv, 96-97, 99. Indiana fossils.

FOGLESONG, John E(dward), *Chemistry.* Lucerne, Ind, 7/20/85; m. 15, c. 1. A.B, Wabash Col, 10; A.M, Ohio State, 12; Ph.D, Cornell, 19. Mississippi, prof, 28-.

FOLEY, Arthur L(ee), *Physics* (starred). Hancock Co, Ind, 2/22/67, died, 45; m. 85, c. 2. Cent. Nor. Col, 82-84; A.B, Indiana, 90, A.M, 91; Ph.D, Cornell, 97. Indiana, 90-37, prof. and head dept, 97-37. Ind. Acad. Sci. (pres, 09, very active member 51 years). Velocity of sound; locomotive whistles; horns; microphones, architectural acoustics; author of a widely-used college textbook.

FOLEY, John P(orter), *Psychology.* Bloomington, Ind, 5/16/10; m. 33. A.B, Indiana, 31; A.M, Columbia, 32, Ph.D, 35. Psychol. Corp, 44-, assoc. dir, 45-.

FOLGER, Harry Thomas, *Zoology.* Columbus, Ind, 2/12/89; m. 19, c. 3. A.B, Indiana, 17; Ph.D, Hopkins, 22. Fisk, prof, 28-.

FOOHEY, William L(ogan), *Chemistry.* Ft. Wayne, Ind, 1/1/05; m. 32, c. 3. B.S, Notre Dame, 26, Ph.D, 29. Dupont Co, 29-, ch. chem, 33-.

FORDICE, Morton W., *Zoology.* Russellville, Ind, 5/26/64, died, 39; m. 93, c. 4. B.S, Indiana, 86. Farmer, 86-39. Author several papers on Indiana fishes.

FORRESTER, Jay H(artley), *Chemical engineering.* Hillsboro, Tex, 12/10/06; m. 35, c. 2. B.S, Wisconsin, 28; S.M, Mass. Inst. Tech, 32. Standard Oil Co. Ind, 29-46, assoc. dir. res, 38-46.

FORSYTH, C(hester) H(ume), *Mathematics,* Trafalgar, Ind, 3/17/91; m. 13, c. 1. A.B, Butler, 06; A.M, Illinois, 10; Ph.D, Michigan, 15. Dartmouth Col, 16-, prof, 39-.

FORTUNE, W(illiam) Brooks, *Analytical chemistry.* Holmesville, O, 7/2/13; m. 41, c. 2. B.S, Mt. Union Col, 34; M.S, Purdue, 36, Ph.D, 38. Eli Lilly & Co, 38-.

FORZIATI, Florence Hooper, *Chemistry.* Union Co, Ky, 12/6/04; m. 45. B.S, Butler, 26; Ph.D, Iowa State Col, 30. U. S. Bur. Standards, 48-.

FOSTER, Dean, *Psychology.* Bellflower, Ill, 6/22/19; m. 42, c. 2. A.B, Indiana, 42; Ph.D, Cornell, 49. Jos. E. Seagram & Sons, 42-.

FOSTER, Joseph F(ranklin), *Chemistry.* Marion, Ind, 5/17/18; m. 40, c. 1. B.S, Iowa State Col, 40, Ph.D, 43. Am. Maize Prod. Co. (Ind.), 45-46.

FOUTS, Everett L(incoln), *Dairy manufactures.* Lafayette, Ind, 3/12/00; m. 29, c. 2. B.S.A, Purdue, 23; M.S.A, Okla. A. & M. Col, 31; Ph.D, Iowa State Col, 39. Purdue, instr, 25-27.

FOUTS, Paul J(ones), *Medicine.* Centerville, Ind, 6/15/05; m. 31, c. 2. A.B, Indiana, 26, M.D, 29. Indiana, 47-, assoc. prof, 49-.

FOWERBAUGH, Clarence Corodon, *Psychology.* Huntington, Ind, 3/5/05. A.B, Indiana, 27, A.M, 28, Ph.D, 30. Child Guidance Clinic (Cleveland), 30-.

FOWKE, Gerard, *Archeologist.* Maysville, Ky, 6/25/55, died, 33. Bur. Am. Ethnology, 85-88, 91-93; surveyed aboriginal remains; 11-16 traced pre-glacial channels of entire Ohio valley. Author: *Archaeological History of Ohio,* 1902.

FOWLER, Earl D(onald), *Soils.* Fairmount, Ind, 2/2/90; m. 20, c. 5. B.S, Earlham Col, 15. U. S. Soil Surv, 19-30; U. S. Dept. Agr, 31-, Soil Cons. Serv, 36-, prin. sci, 43-.

FOXWORTHY, F(red) W(illiam), *Botany.* Goodland, Ind, 7/2/77; m. 34. B.S, DePauw, 99; A.M, Cornell, 02, Ph.D, 04. Bur. Forestry (Philippines), forest res. off, 11-17; Federated Malay States, 18-32.

FRAGEN, N(athan), *Chemical engineering.* Kansas City, Mo, 5/10/08; m. 33, c. 2. B.S, Washington (Seattle), 29; M.S, Michigan, 33, Ph.D, 36. Standard Oil Co. Ind, asst. dir. res, 34-.

FRANCIS, F(rederick) D(avid), *Pathology.* Windfall, Ind, 7/9/86; m. 15. B.S, Earlham Col, 11; D.D.S, Iowa, 24. Iowa, 24-, prof, 43-.

FRANCIS, Thomas, Jr, *Pathology* (starred), *Medicine.* Gas City, Ind, 7/15/00; m. 33, c. 2. B.S, Allegheny Col, 21; M.D, Yale, 25. Michigan, sch. pub. health, prof, 41-. Poliomyelitis.

FRANK, J(oseph) O(tto), *Inorganic chemistry, Metallography.* Lebanon, Ind, 2/14/85; m. 06, c. 4. A.B, Indiana, 09, A.M, 12. Wis. State Teachers Col. (Oshkosh), prof, 12-.

FRAZIER, Chester N(orth), *Dermatology.* Portland, Ind, 1/27/92; m. 18, c. 1. B.S, Indiana, 15, M.D, 17; Dr.P.H, Hopkins, 47. Indiana, 20-22; Peiping Union Med. Col. (China), 22-42; Texas, chm. dept, 42-48; Harvard, prof, 48-.

FRAZIER, John C(arroll), *Plant physiology.* Middletown, Ind, 3/29/00; m. 25. A.B, DePauw, 25; M.A, Nebraska, 26; Ph.D, Chicago, 39. Kans. State Col, 36-, assoc. prof, 45-46, exp. sta, 46-.

FRAZIER, Robert Harrison, *Metallurgical engineering.* Boswell, Ind, 7/23/20; m. 44, c. 2. B.S, Purdue, 42. Battelle Mem. Inst, 47-.

FREBERG, C(arl) Roger, *Mechanical engineering.* Hector, Minn, 3/17/16; m. 41, c. 2. B.M.E, Minnesota, 38, M.S, 40; Ph.D, Purdue, 43. Purdue, 40-45, asst. prof, 43-49; Res. Inst, head, 46-49; U. S. Naval Civil Eng. Lab, dir. eqpt. res, 49-.

FRED, Mark (Simon), *Physics.* Richmond, Ind, 6/26/11; m. 41, c. 1. S.B, Chicago, 33, S.M, 34, Ph.D, 37. Standard Oil Co. Ind, 37-43; Manhattan proj, Chicago, 42-45; Armour Res. Found, 45-48; U. S. Argonne Natl. Lab, 48-.

FREDERICK, Marvin R(ay), *Organic chemistry.* Wadsworth, O, 4/12/18; m. 41, c. 2. B.Sc, Ohio State, 41; Ph.D, Purdue, 47. B. F. Goodrich Co, 46-.

FREDINE, C(larence) Gordon, *Agriculture.* St. Paul, Minn, 8/15/09; m. 34, c. 2. B.S, Hamline, 32. Purdue, exp. sta, asst. prof, 41-47.

FREE, Alfred H(enry), *Biochemistry.* Bainbridge, O, 4/11/13; m, c. 4. A.B, Miami (O.), 34; M.S, Western Reserve, 36, Ph.D, 39. Miles res. labs. (Elkhart, Ind.), 46-.

FREEMAN, Leslie Willard, *Medicine.* Escanaba, Mich, 8/17/15; m. 38, c. 5. A.B, Augustana Col, 37; Ph.D, Chicago, 40, M.D, 43. Indiana, asst. prof. and dir. surg. res, 48-.

FREEMAN, Otis W(illard), *Geography, Geology.* Otsego, Mich, 4/13/89; m. 14, c. 3. A.B, Albion Col, 10; M.S, Michigan, 13; Ph.D, Clark, 29. East. Wash. Col. Educ, 24-; Indiana, act. prof, 43-46; act. state geol, Ind, 45.

FREEMAN, Raymond B(arrett), *Chemical engineering.* Indianapolis, Ind, 11/1/99; m. 34, c. 3. B.S, Purdue, 21. Commonwealth-Edison, 23-.

FREEMAN, V(erne) C(rawford), *Agricultural administration.* Bentonville, Ind, 12/25/00; m. 26, c. 1. B.S.A, Purdue, 23, M.S.A, 26. Purdue, 26-, assoc. dean, 39-, prof, 42-.

FRENCH, H(arley) E(llsworth), *Anatomy.* Delphi, Ind, 12/7/73. A.B, State Col. Wash, 02; M.D, Northwestern, 07; M.S, Chicago, 11. North Dakota, dean sch. med, 11-47.

FRENCH, Sidney J(ames), *Chemistry.* Superior, Wis, 3/1/94; m. 29, c. 1. B.S, Chicago, 22; M.S, Wisconsin, 26, Ph.D, 28. Franklin Col, prof, 28-32; Colgate, 32-, prof, 38-.

FREYBERG, Richard H(arold), *Clinical medicine.* Goshen, Ind, 8/14/04; m. 32, c. 2. A.B, Michigan, 26, M.D, 30, M.S, 34. Michigan, 34-44, asst. prof. arthritis res, 37-44; Cornell, assoc. prof, 44-; New York Hosp, ch, arthritis clin, 44-.

FRICK, Frederick C., *Psychology.* Colorado Springs, Colo, 11/5/17; m. 44, c. 1. A.B, DePauw, 38; Ph.D, Columbia, 46. Harvard, instr, 46-.

FRIED, Maurice, *Soil chemistry.* N. Y. C, 11/6/20; m. 43, c. 1. B.S, Cornell, 41, M.S, 45; Ph.D, Purdue, 48. Purdue, instr, 47-48; U. S. Dept. Agr, 48-.

FRIEDLAENDER, W(illiam) V(ictor), *Mechanical engineering.* Oppeln, Germany, 10/9/04; m. 38, c. 1. Universal Atlas Cement Co. (Ind.), 37-.

FRIEDLANDER, Herbert N(orman), *Chemistry.* Chicago, Ill, 3/12/22; m. 43, c. 2. S.B, Chicago, 42, Ph.D, 47. Standard Oil Co. Ind, 48-.

FRIEDMAN, Maurice H(arold), *Physiology.* East Chicago, Ind, 10/27/03; m. 31, c. 3. B.S, Chicago, 24, Ph.D, 28, M.D, 33. Georgetown, instr. med, 46-.

FRIEDRICH, Martin E(dwin Paul), *Chemistry.* Hobart, Ind, 1/29/04; m. 29, c. 2. A.B, Augustana Col, 25; M.S, Louisville, 26; Ph.D, Illinois, 30. Dupont Co, 29-.

FRIES, B(ernard) A(lbert), *Radiochemistry.* Indianapolis, Ind, 6/26/17; m. 39, c. 2. B.S, California, 36, Ph.D, 41. Calif. Res. Corp, 45-.

FRIESNER, Ray C(larence), *Botany.* Bremen, O, 2/8/94; m. 16, 22. A.B, Ohio Wesleyan, 16; Ph.D, Michigan, 20. Butler, 19-, prof, 25-, dir. grad. instr, 44-47, dean col. lib. arts and sci, 47-. Ind. Acad. Sci. (sec, 26-35; pres, 36). Plant distribution; tree growth, cytology; plant-mitotic rhythms. One of the most active botanists in Indiana since 1919. A leader in the Ind. Acad. Sci.

FRISHE, W(illiam) C(hristopher), *Chemical engineering.* Louisville, Ky, 3/23/12; m. 38, c. 3. B.A, Maryville Col, 35; M.S, Cincinnati, 38; Ph.D, Indiana, 43.

FRITH, Gladys Dykes, *Clinical psychology.* Montgomery Co, Ind, 12/27/99; m. 27, c. 2. A.B, Indiana, 22, A.M, 23, Ph.D, 25, M.D, 29. Indiana, 22-42, instr, 22-25, Riley Hosp. (Indianapolis), 25-29, exten. lect, 29-42; South Bend, city sch. psych, 31-.

FRITZLEN, Thomas L(eo), *Metallurgy.* Indianapolis, Ind, 10/21/05; m. 48, c. 2. B.S, Purdue, 27. Aluminum Co. Am. 27-41, Ind. plant, ch. metal, 39-41.

FRONING, H(enry) B(ernhardt), *Chemistry.* Sebastian, O, 9/7/84, died, ca. 47. A.B, St. Joseph's Col. (Ind.), 08; A.M, Ohio State, 12. Notre Dame, prof, 20-47, dean col. sci. 40-47.

FRONING, J(oseph) Fendall, *Organic chemistry.* Columbus, O, 8/9/16; m. 40, c. 3. B.S, Notre Dame, 37, M.S, 38, Ph.D, 40. Dupont Co, 40-.

FROST, Lawrence W(illiam), *Chemistry.* Fredonia, N. Y, 12/2/20; m. 42. A.B, Allegheny Col, 41; Ph.D, Purdue, 44. Purdue, 44-46; Westinghouse Elec, 46-.

FRUTH, Hal Frederich, *Applied physics.* Albany, Minn, 2/27/90; m. 20, c. 1. B.S, M.S, St. John's (Minn.), 14; M.S, Minnesota, 22; Ph.D, Michigan, 27. P. R. Mallory Co. (Indianapolis and Purdue), 32-37; West. Elec. (Chicago), 37-42.

FRY, Cleota G(age), *Applied mathematics.* Shoshone, Idaho, 12/30/10. B.A, Reed Col, 33; M.S, Purdue, 36, Ph.D, 39. Purdue, 41-, asst. prof, 47-.

FRYE, Robert, *Organic chemistry.* Armstrong, Ill, 10/10/01; m. 26. A.B, Indiana, 23, A.M, 24. Sherwin-Williams Co. (Chicago), 35-40.

FRYER, Oscar G(ibson), *Physics.* Harrisburg, Ill, 1/8/96; m. 26, c. 2. A.B, Drury Col, 25; A.M, Colorado, 29; Ph.D, Indiana, 36. Drury Col, 36-, prof, 40-.

FUGUITT, Robert E(ugene), *Physical chemistry.* Boone Grove, Ind, 7/17/17; m. 39, c. 1. B.S, Florida, 37, B.A, 38, M.S, 40, Ph.D, 43. Glidden Co, asst. dir. res, 47-.

FUHRMAN, Albert W(illiam), *Chemistry.* Brooklyn, N. Y, 1/13/21; m. B.S, Col. City N. Y, 42; Columbia, 42; M.S, Purdue, 44, Ph.D, 48. Glenn L. Martin Co, 48-.

FULLER, F(rederick) D(riggs), *Chemistry.* Hanover, N. H, 5/14/72; m. 95, c. 4. B.S, New Hampshire, 92; M.S, Purdue, 12. Ind. Exp. Sta. (Lafayette), 10-16; Texas, exp. sta, 17-43.

FULLER, Harold Q., *Physics.* Waynetown, Ind, 4/21/07; m. 32, c. 3. A.B, Wabash Col, 28; A.M, Illinois, 30, Ph.D, 32. Mo. Sch. Mines, 47-.

FULLER, Thomas C(harles), *Botany.* Evanston, Ill, 8/2/18; m. 45, c. 2. B.S, Northwestern, 40; M.S, New Mexico, 42; Ph.D, Chicago, 47. Hanover Col, prof, 48-.

FULMER, Jervis M(oissan), *Organic chemistry.* Pullman, Wash, 8/10/98; m. 23, c. 2. B.S, State Col. Wash, 20; M.S, Minnesota, 22; Ph.D, Colorado, 25. DePauw, 31-, prof, 38-, head dept, 44-.

FULTON, Joseph P(atton), *Plant pathology.* Princeton, Ind, 7/1/17; m. 45. A.B, Wabash Col, 39; M.A, Illinois, 41, Ph.D, 47. Arkansas, asst. prof, 47-.

FULTON, Robert W(att), *Plant pathology.* Sistersville, W. Va, 1/29/14. A.B, Wabash Col, 35; Ph.D, Wisconsin, 40. Wabash Col, instr, 35-37; Wisconsin, 37-42; U. S. Dept. Agr, 46-.

FUNK, Forest J(ames), *Public health.* Lagrange Co, Ind. B.S, Purdue, 14. Dupont Co, res. chem. and microbiol, 19-.

FUNKHOUSER, William D(elbert), *Entomology.* Rockport, Ind, 3/13/81, died, 48. A.B, Wabash Col, 05, Sc.D, 29; A.M, Cornell, 13, Ph.D, 16. Kentucky, 18-, dean grad. sch, 25-, prof. anthrop, 30-. Entom. Soc. Am. (pres, 40).

FURBAY, John H(arvey), *Aviation, Education.* Mt. Gilead, O, 9/23/03; m. 28, c. 2. A.B, Asbury Col, 24; A.M, N. Y. U, 27; Ph.D, Yale, 31. Taylor, 27-33, prof. zool, 31-33; Trans-World Airlines, dir, 45-. Mastodons of Indiana.

FURGASON, Waldo H., *Zoology.* Canby, Minn, 4/25/02. A.B, St. Olaf Col, 24; Ph.D, Stanford, 36. Wabash Col, 38-49; assoc. prof, 47-49.

FURNAS, Clifford C(ook), *Chemical engineering.* Sheridan, Ind, 10/24/00; m. 25, c. 1. B.S, Purdue, 22; Ph.D, Michigan, 26. Cornell Aeronaut. Lab, Inc, dir, 46-.

FURNAS, Mrs. Sparkle Moore, *Nutrition, Foods.* Zionsville, Ind, 3/14/01; m. 25, c. 1. B.S, Purdue, 24; M.S, Minnesota, 30. Ind. high schs, 22-25; Buffalo, 44-.

FURNESS, L(awton) W(illiams), *Civil engineering.* Stafford, Conn, 12/21/06; m. 32, c. 1. B.S, Carnegie Inst. Tech, 28. U. S. Geol. Surv, Conn. and Ind, 35-46; hydrol, Ind, 47-.

FURRY, W(endell) H(inkle), *Physics* (starred). Prairieton, Ind, 2/18/07; m. 31, c. 2. A.B, DePauw, 28; A.M, Illinois, 30, Ph.D, 32. Harvard, 34-, assoc. prof, 40-.

FUSSLER, Karl H(artley), *Physics.* Greencastle, Ind, 8/6/87; m. 13, c. 2. A.B, Indiana, 09; Ph.D, Pennsylvania, 16. DePauw, instr, 09-10; Pennsylvania, 10-20; North Carolina, prof, 29-.

GAGE, N(athaniel) L(ees), *Psychology, Education.* Union City, N. J, 8/1/17; m. 42, c. 1. A.B, Minnesota, 38; Ph.D, Purdue, 47. Purdue, to dir. div. educ. ref, 40-47.

GALLAGHER, C(harles) J(oseph), *Physics.* Philadelphia, Pa, 10/16/17; m. 43, c. 2. B.S, Temple, 38, M.A, 40; Ph.D, Notre Dame, 42. Gen. Elec, 45-.

GALLOWAY, J(esse) J(ames), *Geology, Paleontology.* Cromwell, Ind, 8/23/82; m. 13, c. 1. A.B, Indiana 09, A.M, 11, Ph.D, 13. Indiana, instr, 13-16, prof, 31-.

GAMBILL, William G(ray), *Botany.* Boulder, Colo, 6/9/15. A.B, Colorado, 35, A.M, 36; Ph.D, Illinois, 47. Wabash Col, asst. prof, 48-.

GANIER, Albert F(ranklin), *Ornithology.* Vicksburg, Miss, 9/9/83; m. 12, c. 3. C.E, Purdue, 08. Wilson Ornith. Club (sec, 18-23; pres, 24-26); Tenn. Ornith. Soc. (pres, 19-30).

GANTZ, E(dwin) St. Clair, Jr, *Chemistry.* Hynes, Iowa, 3/17/10; m. 42, c. 1. A.B, Iowa, 31, M.S, 32, Ph.D, 35. Wabash Col, 35-43, asst. prof, 37-43; Purdue, asst. prof, 43-49.

GANTZ, Richard A., *Biology.* Saline City, Ind, 3/18/79, died, 28. A.B, Michigan, 12; M.S, Illinois, 18. Indiana, schs, 06-09; Ball State Teachers Col, prof, 19-25.

GARCEAU, George J(oseph), *Surgery.* Anoka Co, Minn, 5/24/93; m. 27, c. 2. B.A, Minnesota; M.D, Northwestern, 25. Indiana, chm. orthop. surg, 33-.

GARDNER, Irvine C(lifton), *Physics.* Idaville, Ind, 9/19/89; m. 27. A.B, DePauw, 10; M.S, Harvard, 12, Ph.D, 15. U. S. Bur. Standards, 21-.

GARDNER, J(ames) L(inton), *Botany.* Henry Co, Ind, 1/10/01. A.B, Colo. Col, 27; A.M, Colorado, 30; Ph.D, Texas, 35. U. S. Dept. Agr, soil cons. serv, 35-, 43-.

GARDNER, Karl E(drick), *Dairy production.* Chicago, Ill, 2/11/13; m. 38, c. 3. B.S, Purdue, 36; M.S, Cornell, 39, Ph.D, 40. Illinois, 40-, asst. prof, 46-.

GARDNER, Max W(illiam), *Botany.* (starred), *Plant pathology.* Lansing, Mich, 5/11/90; m. 22, c. 2. B.S, Mich. State Col, 12; M.S, Wisconsin, 15, Ph.D, 18. Purdue, exp. sta, 19-32, ch. bot, 29-32; California, exp. sta, 32-.

GARDNER, Raymond E(rl), *Immunology.* Terre Haute, Ind, 9/23/03. A.B, Ind. State Nor. Sch, 26; Sc.D, Hopkins, 30. Hopkins, 30-, filterable viruses, 33-.

GARLAND, J(asper) V(anderbilt), *Speech.* Huntingburg, Ind, 6/30/04; m. 29, c. 2. B.A, Indiana, 27, M.A, 30; Ph.D, Syracuse, 44. Colgate, 30-46.

GARNER, J(ames) B(ert), *Chemistry.* Lebanon, Ind, 9/2/70. B.S, Wabash Col, 93, M.S, 95; Ph.D, Chicago, 97. Wabash, 93-95, prof, 01-14; Mellon Inst, 15-, chem. storage, 42-.

GARNER, Murvel R(iley), *Zoology.* Marion, Ind, 10/29/96; m. 17, 27, c. 4. A.B, Earlham Col, 23; Ph.D, Chicago, 33. Earlham, 23-, asst. prof, 24-33, prof, 33-.

GARRELTS, Jewell Milan, *Civil engineering.* McPherson, Kans, 10/25/03; m, c. 3. B.S, Valparaiso, 24; M.S, Columbia, 33. Columbia, 27-, prof, 46-.

GARRETT, Paul Hobart, *Physics, Mathematics.* Reading, Pa, 6/15/02; m. 36, c. 2. A.B, Wabash Col, 23; Ph.D, Columbia, 32. Wabash Col, instr, 23-24; Columbia, Bard Col, prof, 40-.

GARTLEIN, Carl W(itz), *Physics.* Connersville, Ind, 11/13/02; m. 29, c. 3. B.A, DePauw, 24; Ph.D, Cornell, 29. Cornell, 38-.

GASSMANN, Albert G(eorge), *Chemistry.* Valley City, N. Dak, 11/5/14; m. 40, c. 1. A.B, N. Dak. State Teachers Col, 36; B.S, Washington (Seattle), 36; Ph.D, Indiana, 41. Ethyl Corp, 46-.

GATCH, W(illis) D(ew), *Surgery.* Aurora, Ind, 10/27/78; m. 11, c. 1. A.B, Indiana, 01; M.D, Hopkins, 07. Indiana, prof, 12-46, dean, 31-46.

GAULT, H(ugh) R(ichard), *Geology.* Chicago, Ill, 2/7/15; m. 43, c. 2. A.B, DePauw, 36; M.A, Missouri, 38; Ph.D, Hopkins, 42. U. S. Geol. Surv. Alaska branch, 42-.

GAYLORD, Fay C(laude), *Horticulture.* Lafayette, Ind, 3/19/89; m. 18, c. 1. B.S.A, Purdue, 17. Purdue, exp. sta, 17-, prof, 25-35, asst. ch. hort, 35-.

GAYNOR, J(ames) W(illiam), *Petroleum chemistry.* Springfield, S. Dak, 8/28/12; m. 37, c. 1. B.S, Yankton Col, 33; M.S, Michigan, 37. Standard Oil Co. Ind, 37-, group leader, 46-.

GEBHARD, Paul Henry, *Anthropology.* Rocky Ford, Colo, 7/3/17; m. 39, c. 1. B.S, Harvard, 40, M.A, 42, Ph.D, 47. Indiana res. assoc. inst. sex res, 46-, instr. 47-.

GEDDES, Ray L(lewellyn), *Physical chemistry.* Wellington, Kans, 1/27/05; m. 28, c. 3. B.S, Kans. State Col, 27; M.S, Ohio State, 28, Ph.D, 30. Standard Oil Co. Ind, 30-36.

GEHMAN, Harry, *Chemistry.* Twelve Mile, Ind, 11/15/05; m. 35, c. 2. B.Sc, Ashland Col, 29; M.Sc, Ohio State, 32, Ph.D, 36. Corn Prods. Ref. Co, 43-, asst. dir. res, 44-.

GEIB, Irving G(eorge), *Physics.* Buffalo, N. Y, 9/15/07; m. 38, c. 2. B.S, Buffalo, 28; Ph.D, Purdue, 48. Purdue, assoc. prof, 48-.

GEIGER, Beatrice J(ane), *Nutrition.* Oshkosh, Wis, 2/7/95. S.B, Chicago, 19; M.S, Columbia, 26; Ph.D, Wisconsin, 32. Indiana, prof, 39-.

GEIGER, H(oward) E(ugene), *Psychology.* Perrysburg, O, 3/26/10; m. 37, c. 3. A.B, Albion Col, 36; M.S, Purdue, 37, Ph.D, 40. Albion, prof, 39-46.

GEIGER, John W(illiam), *Mechanical engineering.* Hartford City, Ind, 5/31/98; m. 20, c. 3. B.S, M.E, Purdue, 20; M.S, M.E, 23. Purdue, 21-, asst. prof, 30-.

GEISSMAN, T(heodore) A(lbert), *Organic chemistry.* Chicago, Ill, 6/17/08; m. 36, c. 1. B.S, Wisconsin, 30; Ph.D, Minnesota, 37. Standard Oil Co. Ind, 30-34; California L. A, 44-, prof, 48-.

GEORGE, E(verett) (Elwood), *Electrical engineering.* Madison, Ind, 11/27/92; m. 13, c. 1. B.S, Purdue, 13. Ebasco Services, 25-.

GEORGE, R(oscoe) H(enry), *Electrical engineering.* Fairmount, Ind, 12/9/96; m. 17, c. 3. B.S, Purdue, 22, M.S, 27. Purdue, exp. sta, 20-, res. assoc, 28-46, asst. prof, 34-46, prof, 46-.

GEORGES, Louis W(illiam), *Organic chemistry.* Marcus, Ia, 6/12/06; m. 38, c. 3. B.S, Notre Dame, 29; A.M, Ohio State, 31, Ph.D, 34. U. S. Dept. Agr, 41-45; Firestone Tire & Rubber Co, 48-.

GERBER, L(ouis), *Chemistry.* Cardiff, Wales, 5/9/06, nat, 27; m. 34, c. 2. B.S, Illinois, 25; M.S, Purdue, 29, Ph.D, 33. Purdue, 27-33; Schenley Labs, asst. res. dir, 46-.

GERKIN, Ernest Hugh, *Physical chemistry.* Larwill, Ind, 3/31/98; m. 27, c. 2. A.B, Indiana, 22, M.A, 33, Ph.D, 37. High schs, 25-39; Indiana, exten, 39-, asst. prof, 46-.

GERKING, Shelby Delos, *Zoology.* Elkhart, Ind, 11/16/18; m. 43, c. 1. A.B, DePauw, 40; Ph.D, Indiana, 44. Indiana, 44-, instr. to asst. prof, 46-. Fish populations in Indiana.

GERMANN, Albert F. O., *Nutrition biochemistry, Physical chemistry.* Peru, Ind, 2/18/86; m. 14, c. 4. A.B, Indiana, 09, A.M, 10; D.Sc, Geneva, 12. Valparaiso, prof, 26-28; Nutritional Res. Assoc, Inc. (Ind.), pres, 36-.

GERMANN, Frank E(rhart) E(mmanuel), *Chemistry, Physics.* Peru, Ind, 12/6/87; m. 16, c. 2. A.B, Indiana, 11; D.Sc, Geneva, 14. Colorado, prof, 19-.

GERNES, Donald C(onstant), *Chemical engineering.* Wilson, Minn, 6/1/10; m. 35, c. 3. B.Ch.E, Minnesota, 31, M.S, 32, Ph.D, 35. Standard Oil Co. Ind, 46-.

GERRY, Richard W(oodman), *Poultry husbandry.* Lewiston, Me, 11/23/14; m. 36, c. 2. B.S, Maine, 38; M.S, Purdue, 46, Ph.D, 48. Purdue, 43-48; Maine, assoc. prof, 48-.

GERWE, E(lmer) G(eorge), *Biochemistry.* Cincinnati, O, 9/17/02; m. 26, c. 3. B.S, Miami (O.), 25; M.S, Cincinnati, 27, Ph.D, 30. Eli Lilly & Co, 49-.

GETCHELL, B(assford) C(ase), *Mathematics.* Baring, Me, 7/5/04; m. 34. A.B, Colby Col, 27; A.M, Harvard, 29; Ph.D, Michigan, 34. Butler, 36-43, asst. prof, 37-43.

GIACHETTO, John J(acob), *Chemical engineering.* Wilsonville, Ill, 3/21/24; m. 46, c. 1. B.S, Illinois, 45; M.S, Carnegie Inst. Tech, 47. Standard Oil Co. Ind, 47-.

GIACOLETTO, L(awrence) J(oseph), *Communications.* Clinton, Ind, 11/14/16; m. 41. B.S, Rose Poly. Inst, 38; M.S, Iowa, 39. Radio Corp. Am. (N. J.), 46-.

GIDDINGS, Glenn W(ard), *Physics.* Wesley, Ia, 10/15/00; m. 26, c. 2. A.B, Cornell Col, 23; A.M, Wisconsin, 25, Ph.D, 30. DePauw, 30-46, prof, 38-46; Gen. Elec, 46-.

GIDLEY, William Francis, *Pharmacy.* Mich, 82. B.S, Ph.D, Michigan, 08. Purdue, prof, 12-24; Texas, head dept, 24-.

GIER, H(erschel) T(homas), *Cytology.* Helper, Kans, 5/11/07; m. 32, c. 3. B.A, Kans. State Teachers Col, 31; Ph.D, Indiana, 36. Ohio (Athens), 37-47, assoc. prof, 46-47.

GIERUT, Joseph A(loysius), *Organic chemistry.* Chicago, Ill, 3/18/08. A.B, St. Mary's Col. (Mich.), 29; M.S, Notre Dame, 34, Ph.D, 36. Detroit, asst. prof, 47-.

GIESE, John H., *Mathematics.* Chicago, Ill, 3/10/15. B.S, Chicago, 36; Ph.D, Princeton, 40. Purdue, instr, 42-.

GIESE, William James, *Psychology.* Menominee, Mich, 4/16/13; m. 38, c. 2. A.B, Lawrence Col, 36; M.S, Northwestern, 37; Ph.D, Purdue, 45. Wm. J. Giese & Assocs, 46-.

GIFFORD, William E., Jr, *Pharmacy, Chemistry.* Brooklyn, N. Y, 1/24/17. B.S, Butler, 39. Magnavox Co. (Ft. Wayne), 43-.

GILBARG, David, *Algebra.* Brooklyn, N. Y, 9/17/18; m. 41, c. 1. B.S, Col. City N. Y, 38; Ph.D, Indiana, 41. Indiana, 46-, assoc. prof, 48-.

GILBERT, C(harles) H(enry), *Zoology* (starred). Rockford, Ill, 12/5/59, died, 28; m. 83. B.S, Butler, 79; M.S, Indiana, 82, Ph.D, 83. Indiana, 80-91, prof, 88-91; Stanford, prof, 91-28. Fishes.

GILBERT, J(ames) Z(accheus), *Biology, Paleontology.* North Manchester, Ind, 1/1/66, died, 45. Ph.B, McPherson Col, 94; A.M, Kansas, 95. Ind. pub. schs, 84-88; Los Angeles high schs, 04-39.

GILBERT, William J(ames), *Botany.* Shelton, Wash, 2/10/16; m. 42, c. 2. B.S, Washington (Seattle), 38; M.S, Michigan, 39, Ph.D, 42. Commercial Solvents Corp. (Terre Haute), 43-46; Albion Col, 46-, assoc. prof, 48-.

GILBERTSON, L(yle) I(thiel), *Inorganic chemistry.* Beloit, Wis, 7/10/03; m. 30, c. 3. A.B, Augustana Col, 25; A.M, Wisconsin, 26; Ph.D, Indiana, 40. Air Reduction Sales Co, 46-.

GILLAM, W(illiam) Sherman, *Soil chemistry.* Chadron, Nebr, 8/3/08; m. 35, c. 2. A.B, DePauw, 30; M.Sc, Nebraska, 33, Ph.D, 38. Purdue, 40-45; Midwest Res. Inst, 45-.

GILLESPIE, Hazel B(eatrice), *Bacteriology.* Woodmont, Conn, 3/4/03. B.S, Purdue, 27; Ph.D, Yale, 37. Rutgers, 40-, assoc. prof, 48-.

GILLESPIE, Robert H(oward), *Organic chemistry.* Richmond, Ind, 1/31/16; m. 44. B.S, Indiana, 38; Ph.D, Wisconsin, 44. Kendell Mills, textiles chem, 44-.

GILLILAND, W(illiam) L(ester), *Organic chemistry.* Harrington, Wash, 3/29/00; m. 22, c. 4. B.S, Washington (Seattle), 20, M.S, 21; Ph.D, Mass. Inst. Tech, 25. Purdue, assoc. prof, 44-.

GILLUM, Helen L(ouise), *Nutrition.* Terre Haute, Ind, 6/23/91. A.B, Ind. State Teachers Col, 15; M.A, Columbia, 20; Ph.D, California, 35. Ind. schs, 15-18; Ind. State Teachers Col, 24-34, assoc. prof, 33-34; California, assoc. prof, 45-.

GILLUM, Robert Greene, *Physics.* Greenville, Va, 1/22/55, died, 24. B.A, Indiana, 81. Prin. Ind. high schs, and prof, Ind. State Nor. Sch, 90-24.

GINSBERG, Bernard, *Physical chemistry.* Marlin, Tex, 1/30/03. B.S, Chicago, 26, Ph.D, 29. Standard Oil Co. Ind, 29-.

GIORDANO, A(lfred) S(abato), *Pathology.* Avellino, Italy, 2/3/93, nat; m. 23, c. 4. B.S, Syracuse, 18, M.D, 20; M.S, Minnesota, 22. South Bend Med. Found, dir, 22-.

GIRTON, Raymond E(lwood), *Plant physiology.* Newton, Ia, 9/9/99; m. 26, c. 3. B.S, California, 22, Ph.D, 26. Purdue, 28-, prof, 37-.

GIRVIN, Harvey F(rank), *Mechanics.* Hancock, Mich, 2/6/86; m. 23, c. 1. B.M.E, Michigan, 11. Purdue 27-, prof, 42-.

GLASS, L(eroy) C(onrad), *Zoology, Genetics.* Tipton, Ind, 11/18/93; m. 23, c. 2. B.S, Purdue, 21; M.S, Wisconsin, 23. Idaho, asst. prof, 30-43.

GLASS, Robert Lee, *Neurosurgery.* Springfield, O, 1/10/00; m. 25, c. 3. A.B, Earlham Col, 20; M.D, Michigan, 24. Indiana, 35-, assoc. prof, 39-.

GLENN, Earl R(ouse), *Physics.* Vevay, Ind, 6/12/87. A.B, Indiana, 13; A.M, Columbia, 28. Teacher (Ind.), 09-15; Columbia, Teachers Col, instr, 20-28; N. J. State Teachers Col, prof, 28-.

GLENN, Oliver E(dmunds), *Mathematics* (starred). Vevay, Ind, 10/3/78; m. 03, c. 2. A.B, Indiana, 02, A.M, 03; Ph.D, Pennsylvania, 05. Pennsylvania, 06-30, prof, 14-30.

GLICK, F(rancis) J(ames), *Biochemistry.* Columbus, Ind, 10/9/16. A.B, DePauw, 39; Ph.D, Illinois, 43. Allied Chem. & Dye Corp, 43-.

GLIDEWELL, Marvin E(lmer), *Chemistry.* Plainfield, Ind, 8/2/16; m. 41, c. 2. A.B, Indiana, 41. Magnavox Co. (Ft. Wayne), 41-.

GLUESENKAMP, Earl W(illiam), *Chemistry.* Indianapolis, Ind, 9/4/07; m. 31, c. 1. B.S, Butler, 28; M.S, Illinois, 30; Ph.D, Purdue, 36. Monsanto Chem. Co, 36-.

GOBBLE, Carl Flindt, *Animal husbandry.* Abingdon, Ia, 7/7/85; m. 13, c. 3. B.S.A, Iowa State Col, 11. Purdue, 11-, prof, 32-.

GOCHENOUR, W(illiam) S(ylva), *Bacteriology, Pathology.* York, Pa, 9/22/91; m. 15, c. 2. V.M.D, Pennsylvania, 13. Pitman-Moore Co. (Indianapolis), dir. biol. labs, 38-.

GODDARD, P(liny) E(arle), *Anthropology* (starred). Lewiston, Me, 8/24/69, died, 28; m. 93, c. 6. A.B, Earlham, 92, A.M, 96; Ph.D, California, 04. California, 01-09; Am. Mus. Natural History (N. Y.), 09-28.

GODDIN, C(lifton) S(ylvanus), *Chemical engineering.* Richmond, Va, 7/23/14. B.S, Michigan, 36, M.S, 37. Standard Oil Co. Ind, 37-41.

GODWIN, Melvin C(rawford), *Embryology.* Moores Hill, Ind, 11/30/08; m. 40, c. 3. A.B, DePauw, 31; Illinois, 32; Ph.D, Cornell, 36. Loyola, instr, 46-.

GOEBEL, Charles Gale, *Chemistry.* Indianapolis, Ind, 11/19/17; m. 45. A.B, Indiana, 39; M.S, Purdue, 41, Ph.D, 44. Emery Industs, 43-.

GOGLIA, M(ario) J(oseph), *Mechanical engineering.* Hoboken, N. J, 3/30/16; m. 40, c. 2. M.E, Stevens Inst. Tech, 37, M.S, 41; Ph.D, Purdue, 48. Purdue, assoc. prof, 47-48; Ga. Inst. Tech, prof, 48-.

GOLDEN, K(atherine) E(liza), *Botany.* Canada, 69. B.S, Purdue, 90, M.S, 92. Ind, exp. sta, 90-93, Purdue, 93-03.

GOLDRICK, Richard M(organ), *Chemistry.* Alliance, O, 3/10/12; m. 40. B.S, Mt. Union Col, 34; M.S, Syracuse, 36; Ph.D, Purdue, 40. Dupont Co, 40-.

GOLDSBOROUGH, W(inder), E(lwell), *Electrical engineering.* Baltimore, Md, 10/10/71. M.E, Cornell, 92. Purdue, prof, 94-05; Henry L. Doherty Res. Labs, dir, 23-32.

GOLDSMITH, William M(arion), *Zoology.* St. Francis, Ark, 2/19/88; m. 13, c. 4. B.Pd, Mo. State Nor. Sch, 09; A.B, Hillsdale Col, 13; A.M, Indiana, 16, Ph.D, 20. Oakland City Col, prof, 13-15.

GOLOMB, M(ichael), *Mathematics.* Munich, Germany, 5/3/09, nat, 46; m. 39, c. 1. Ph.D, Berlin, 33. Purdue, 42-, assoc. prof, 46-.

GONSER, Bruce W(infred), *Metallurgy.* Hudson, Ind, 9/9/99; m. 25, c. 3. B.S, Purdue, 23, Ch.E, 30; M.S, Utah, 24; S.D, Harvard, 33. Battelle Mem. Inst, 34-, super. non-ferrous div, 35-.

GOODE, George Brown, *Zoology.* New Albany, Ind, 2/13/51, died, 96. A.B, Wesleyan, 74. Natl. Museum, ch. fish div, 74-87; Smithsonian Inst, asst. sec, 87-96. Had a highly significant part in the advancement of science and of museums.

GOODNIGHT, Clarence J(ames), *Zoology.* Gillespie, Ill, 5/30/14; m. 40. A.B, Illinois, 36, A.M, 37, Ph.D, 39. Purdue, 46-, assoc. prof, 48-.

GOODNIGHT, Mrs. Marie (Louise), *Biology.* Blue Island, Ill, 8/27/16; m. 40. B.S, Kans. State Col, 38; M.S, Illinois, 39. Purdue, prof, 46-.

GOORLEY, John T(heodore), *Pharmacy.* Galion, O, 3/12/07. B.S, Ohio State, 30; M.S, Purdue, 32, Ph.D, 34. U. S. Army, Sanit. Corps, 42-.

GORDON, Allan T(homas), *Psychology.* Paris, Ill, 3/11/18. A.B, DePauw, 39; A.M, Ohio State, 40; Ph.D, Chicago, 49. Chicago, asst. prof, 49-.

GORDON, Moses, *Chemical engineering.* Tremont, Pa, 5/4/09; m. 39, c. 2. B.Ch.E, Minnesota, 29; M.S, North Dakota, 32; Ph.D, Minnesota, 41. Standard Oil Co. Ind, 39-.

GORE, Robert C(ummins), *Physical chemistry.* Evansville, Ind, 8/18/07; m. 36, c. 1. A.B, Evansville Col, 29; A.M, Indiana, 30, Ph.D, 33. Am. Cyanamid Co, Stamford res. labs, 43-.

GORRELL, George Wollam, *Mathematics.* Ross Co, O, 4/29/74. A.B, Ohio Wesleyan, 03; A.M, Ohio State, 14. DePauw, asst. prof, 16-20; Denver, prof, 22-42.

GORTON, Kenneth Arnold, *Structural geology.* Chelsea, Mich, 6/20/10. A.B, Michigan, 33, Ph.D, 41. Purdue, instr, 41-.

GOSHORN, R(olan) H(enry), *Organic chemistry.* Ladoga, Ind, 4/20/07. A.B, Manchester Col, 29; M.S, Illinois, 32; Ph.D, Purdue, 37. Sharples Chems, Inc, 36-.

GOSS, B(yron) C(assius), *Physical chemistry.* Rochester, Ind, 3/27/90. A.B, Wabash Col, 12; Ph.D, Princeton, 16. Lake Erie Chem. Co, pres, 25-.

GOSS, W(illiam) F(reeman) M(yrick), *Steam engineering.* Barnstable, Mass, 10/7/59, died, 28. Purdue, 79-07, prof, 83-07, dean sch. eng, 00-07; Illinois, dean col. eng, 07-17; Ry. Car Mfrs. Assn, pres, 17-28.

GOTSCH, L(enard) P(aul), *Physical chemistry.* Oak Park, Ill, 12/9/13; m. 44, c. 1. B.A, Valparaiso, 36; M.S, Va. Poly. Inst, 37; Ph.D, Virginia, 40. Am. Can Co, 40-.

GOTTSCHALK, John Simison, *Biology.* Berne, Ind, 9/27/12; m. 37, c. 2. A.B, Earlham Col, 34; M.A, Indiana, 43. State Dept. Cons, Ind, 34-35, supt. fisheries, 38-41; U. S. Fish & Wildlife Serv, 45-.

GOULD, George E(dwin), *Entomology.* Concordia, Kans, 4/22/05; m. 29. A.B, Kansas, 27, M.A, 29; Ph.D, Purdue, 42. Purdue, exp. sta, 31-, asst. prof, 44-.

GOULD, S(ydney) H(enry), *Mathematics.* Ilderton, Ont, Can, 1/25/09; m. 37, c. 3. B.A, Toronto, 29; Ph.D, Yale, 33; M.A, Columbia, 38. Purdue, asst. prof, 47-.

GRAAM, Dona G(ayler), *Biology, Medicine.* Hillsboro, Ind, 11/30/92; m. 30. A.B, Indiana, 20, A.M, 21, Ph.D, 33. Ind. State Nor. Sch, 21-34, assoc. prof, 25-34; Rose Dispensary (Terre Haute), 36-43; Commercial Solvents Corp, 44-.

GRAFF, Morris M(orse), *Chemistry.* Lafayette, Ind, 3/3/10; m. 39, c. 2. B.A, N. Y. U, 39; M.S, Tulane, 46. U. S. Army Chem. Center, 47-.

GRAFF, Paul W(eidemeyer), *Botany.* Indianapolis, Ind, 10/10/87; m. 14. B.S, Conn. Agr. Col, 07; A.M, Columbia, 16, Ph.D, 32. Appalachian State Teachers Col, prof, 47-.

GRAFF, Samuel, *Chemistry.* N. Y. C, 7/25/05; m. 32, c. 2. B.S, Purdue, 27; Ph.D, Columbia, 31. Columbia, 29-.

GRAHAM, Peter Joseph, *Organic chemistry.* Laconia, N. H, 10/19/21; m. 46. B.S, New Hampshire, 42, M.S, 44; Ph.D, Purdue, 47. Dupont Co, 47-.

GRANEY, Maurice (Richard), *Engineering.* Indianapolis, Ind, 4/1/07; m. 35, c. 3. B.S, Purdue, 35, M.S, 37, Ph.D, 42. Purdue, 35-, div. tech. insts, 42-, head, 48-.

GRANT, Charlotte L(iebtag), *Botany.* Indianapolis, Ind, 1/24/06; m. 30. A.B, DePauw, 26; A.M, Illinois, 27, Ph.D, 35. Arsenal Tech. High Sch. (Indianapolis), 35-44.

GRANT, Elmer D(aniel), *Mathematics, Physics.* Delhi, N. Y, 2/25/73, died, 35. A.B, Colgate, 95; A.M, Chicago, 97, Ph.D, 16. Earlham Col, head dept, 20-35.

GRANTHAM, A(rthur) E(lliott), *Agronomy.* Ladoga, Ind, 6/1/77. A.B, Indiana, 03; B.S.A, Missouri, 05. Virginia-Carolina Chem. Co, 19-.

GRANTHAM, G(eorge) M(anners), *Soils.* Ladoga, Ind, 3/5/89. B.S, Illinois, 14; M.S, Nebraska, 27. Mich. State Col, 14-, asst. prof, 17-31, assoc. prof, 31-.

GRANTHAM, G(uy) E(verett), *Physics.* Ladoga, Ind, 2/1/86; m. 19, c. 1. A.B, Indiana, 09, A.M, 13; Ph.D, Cornell, 20. Purdue, instr, 09-15; Cornell, 28-, prof, 36-.

GRATER, Russell K., *Mammalogy.* Lebanon, Ind, 11/16/07; m. 33, c. 3. A.B, Wabash Col, 30. Natl. Park Serv, 32-.

GRAVE, B(enjamin) H(arrison), *Zoology.* Monrovia, Ind, 78, died, 49. B.S, Earlham Col, 03; M.S, Carleton Col, 06; Ph.D, Hopkins, 10. Earlham Col, asst. prof, 08-09; Wabash Col, prof, 20-28; DePauw, prof, 28-48.

GRAVE, Caswell, *Zoology* (starred). Monrovia, Ind, 1/24/70, died, 44. B.S, Earlham Col, 95; Ph.D, Hopkins, 99. Hopkins, assoc. prof, 06-19; Washington (St. Louis), head dept, 19-40. Soc. Zool. (pres, 28).

GRAVE, Thomas B(rooks), *Chemistry.* Richmond, Ind, 8/29/98; m. 29, c. 3. A.B, Hopkins, 19, Ph.D, 23. Squibb & Sons (Brooklyn), 31-41; Evans Res. & Develop. Corp. (N. Y.), 43-.

GRAVES, G(ordon), H(arwood), *Mathematics.* Logansport, Ind, 7/10/84; m. 16, c. 3. B.S, Earlham Col, 05; A.B, Haverford Col, 06; A.M, Columbia, 09, Ph.D, 14. Purdue, 15-, assoc. prof, 27-.

GRAVES, Roy R(alph), *Dairy husbandry.* Cherokee, Kans, 10/8/86; m. 09, c. 5. B.S, Kans. State Col, 09; A.M, Missouri, 12. U. S. Dept. Agr, dairy cattle breeding invests, 17-46; Woodjon Farms, Inc. (Valparaiso, Ind.), pres, 46-.

GRAY, Alta O(doms), *Mathematics.* Fredonia, Ind, 10/1/10. A.B, Cincinnati, 31, A.M, 32, Ph.D, 36.

GRAY, C(larence) T(ruman), *Psychology, Education.* Russell, Kans, 11/22/77; m. 05, c. 2. A.B, Indiana, 04; A.M, Chicago, 11, Ph.D, 16. Texas, 11-, prof, 25-.

GRAY, Daniel M(cCabe), *Chemical engineering.* Indianapolis, Ind, 11/8/01; m. 23, c. 1. B.S, Carnegie Inst. Tech, 23, Ch.E, 27. Stoner-Mudge, Inc, v. p, 40-.

GRAY, Frank, *Physics.* Alpine, Ind, 9/13/87. B.S, Purdue, 11; M.S, Wisconsin, 13, Ph.D, 17. West. Elec, 19-25; Bell Tel. Labs, 25-.

GRAY, Giles Wilkeson, *Speech.* Shelbyville, Ind, 12/11/89; m. 24, c. 3. A.B, DePauw, 14; M.A, Wisconsin, 23; Ph.D, Iowa, 26. Louisiana, asst. prof. to prof, 32-.

GRAY, Harold, *Chemistry.* Carlyle, Ill, 10/30/94; m, c. 1. A.B, Indiana, 22. Eli Lilly & Co, 16-19; B. F. Goodrich Co, 19-.

GRAY, J(acques) P(ierce), *Epidemiology, Public health.* Redkey, Ind, 7/17/00; m. 25, c. 1. B.A, Grinnell Col, 22; M.D, Hopkins, 28; M.P.H, Harvard, 35. Parke, Davis & Co, 47-.

GRAY, Joseph B(urnham), *Chemical engineering.* Annapolis, Md, 8/8/15; m. 41, c. 3. B.A, St. John's Col. (Md.), 36; B.E, Hopkins, 38, Ph.D, 41. Standard Oil Co. Ind, 41-47, group leader, 43-47.

GRAY, Nina E(stella), *Zoology.* Remington, Ind, 10/29/01. A.B, DePauw, 24; A.M, Wisconsin, 30, Ph.D, 33; M.S.P.H, North Carolina, 45. Central Nor. Col. (Ind.), prof, 27-29; Ill. State Nor. U, 35-, assoc. prof, 45-.

GRAY, Percival Allen, Jr, *Internal medicine.* Richmond, Ind, 4/26/00; m. 26, c. 2. B.S, Chicago, 22, 24; M.D, Rush, 27. Santa Barbara Hosp, 27-.

GRAY, Robert E(lanson), *Chemistry.* Anderson, Ind, 7/6/10; m. 34, c. 2. B.S, Purdue, 32. Swift & Co, 33-.

GRAY, Thomas, *Physics, Dynamics.* Lockgelly, Scotland, 2/4/50, died, 08. Rose Poly. Inst, 88-08, v. p, 96-08. An expert on electricity. Ind. Acad. Sci. (pres, 97).

GRAY, Truman S(tretcher), *Electrical engineering.* Spencer, Ind, 5/3/06; m. 31. B.S, Texas, 26, B.A, 27; M.S, Mass. Inst. Tech, 29, Sc.D, 30. Mass. Inst. Tech, 30-, assoc. prof, 42-.

GRAY, William D(udley), *Plant physiology.* Jeffersonville, Ind, 9/21/12; m. 41, c. 2. A.B, DePauw, 33; Ph.D, Pennsylvania, 38. Jos. E. Seagram & Sons, 42-44; Ohio State, assoc. prof, 47-.

GREEN, Arthur L(awrence), *Chemistry.* Newark, O, 9/18/57; dead. Ph.C, Michigan, 82; M.D, Ind. Med. Col. Purdue, dean sch. phar, 88-.

GREEN, Darrell Bennett, *Physics.* Martinsville, Ill, 2/11/93; m. 17, c. 2. A.B, Indiana, 24, A.M, 25, Ph.D, 37. Ohio (Athens), 25-, prof, 39-.

GREEN, Floyd W(ilson), *Chemistry.* Pilot Knob, Mo, 7/27/12; m. 40, c. 2. A.B, DePauw, 38; Ph.D, Cornell, 42. Imperial Paper & Color Corp, 42-.

GREEN, J(erome) J(oseph), *Physics, Electrical engineering.* Somerset, O, 12/26/66. M.E, Ohio State, 93. Notre Dame, prof, 95-15.

GREEN, R(ufus) L(ot), *Mathematics.* Rush Co, Ind, 3/3/62, died, 32; m. 86, c. 3. B.S, Indiana, 85, A.M, 89. Indiana, 85-93, prof, 88-93; Stanford, 93-27, prof, 94-27.

GREEN, William Thomas, *Orthopedic surgery.* Waucoma, Ia, 8/29/01; m. 30, c. 3. A.B, Indiana, 21; M.A, 22, M.D, 25. Harvard, 31-, asst. prof, 40-46, clin. prof, 47-.

GREENBURG, Richard B(ernard), *Organic chemistry.* Kokomo, Ind, 12/26/16. B.S, Purdue, 37; M.S, Illinois, 38; Ph.D, Pa. State Col, 40. Allied Chem. & Dye Corp.

GREENE, Carl H(artley), *Medicine.* South Bend, Ind, 6/22/96; m. 30, c. 3. A.B, Missouri, 14; Ph.D, Yale, 17; M.D, Hopkins, 21. Minnesota, Mayo Found, asst. prof, 27-32; Columbia, 35-47, assoc. prof, 37-47.

GREENE, Cha(rle)s W(ilson), *Physiology* (starred). Crawford Co, Ind, 8/12/66, died, 47; m. 95, c. 3. A.B, Stanford, 92, A.M, 93; Ph.D, Hopkins, 98. Missouri, prof, 00-36.

GREENE, F(rank) C(ook), *Geology, Paleontology.* New Albany, Ind, 4/30/86, died, 50. A.B, Indiana, 08, A.M, 09. State Geol. Surv, Mo, 32-50.

GREENE, George K., *Paleontologist.* Collected tens of thousands of specimens of crinoides near New Albany, Ind, including many new species. Lived alone in New Albany about 1900 and had, he claimed, a collection of more than a million crinoides.

GREENE, Jack Bruce, *Physics.* Bloomington, Ind, 6/9/15; m. 40, c. 2. A.B, Indiana, 37; M.S, Pittsburgh, 40, Ph.D, 42. Marquette, asst. prof, 43-.

GREENE, Laurenz, *Horticulture.* Lincoln, Kans, 5/13/83; m. 11. B.S, Kans. State Col, 06; M.S.A, Iowa State Col, 09; Ph.D, California, 32. Purdue, exp. sta, prof, 17-, head dept, 22-.

GREENE, Richard B(ernard), *Organic chemistry.* Kokomo, Ind, 12/26/16; m. 42, c. 1. B.S, Purdue, 37; M.S, Illinois, 38; Ph.D, Pa. State Col, 40. Allied Chem. & Dye Corp, 40-.

GREENE, R(obert) L(ee), *Chemistry.* Somerset, O, 10/4/69. Ph.G, Ohio State, 92. Notre Dame, prof. and dir. dept. phar, 02-39.

GREENE, S(mith) W(inford), *Animal husbandry.* Bloomington, Ind, 1/9/90. B.S.A, Purdue, 15, M.S.A, 19. U. S. Dept. Agr, 18-.

GREENHILL, Maurice H., *Neuropsychiatry.* Terre Haute, Ind, 8/16/09; m. 36, c. 3. A.B, Rochester, 31; M.D, Chicago, 36. Duke, 41-, assoc. prof, 43-.

GREENLEAF, Herrick E(rnest) H(erbert), *Mathematics.* Waltham, Mass, 8/23/94; m. 17, c. 4. B.S, Boston, 16, M.A, 25; Ph.D, Indiana, 32. DePauw, 21-, prof, 33-.

GREENWELL, Sister Rose Agnes, *Botany.* Leonardtown, Md, 1/8/94. A.B, Notre Dame, 26; M.S, Marquette, 27; Ph.D, Catholic, 35. Nazareth Col. (Ky.), head dept, 31-.

GREENWOOD, W(illiam) Russell, *Cardiology.* Oxford, Ind, 6/25/06. B.S, Purdue, 28, M.S, 30; M.D, Pennsylvania, 35. Purdue, instr. bact, 28-31; Illinois, asst. prof, 48-.

GREGORY, Charles T(ruman), *Plant pathology.* Ithaca, N. Y, 8/31/87; m. 08, 29, c. 2. B.S.A, Cornell, 10, Ph.D, 14. Purdue, path, 19-45.

GREGORY, H(oward) W(ilbur), *Dairying.* Sedan, Kans, 8/11/89. B.S, Okla. A. & M. Col, 12; M.S.A, Purdue, 18. Purdue, asst. prof, 17-20, prof, 20-.

GREULACH, Victor A(ugust), *Botany.* Convoy, O, 12/6/06; m. 34, c. 3. A.B, DePauw, 29; M.S, Ohio State, 33, Ph.D, 40. A. & M. Col. (Tex.), assoc. prof, 46-.

GREULING, Eugene, *Physics.* Indianapolis, Ind, 10/23/14; m. 38. B.S, Butler, 37; Ph.D, Indiana, 42. Duke, prof, 48-.

GREVE, F(rederick) W(illiam), *Hydraulic engineering.* Brooklyn, N. Y, 7/28/85, died, 50; m, c. 1. B.S, Wisconsin, 08, M.E, 09. Purdue, instr. to prof, 12-50.

GRIES, George A(lexander), *Plant physiology.* Cambridge, Mass, 5/2/17; m. 39, c. 2. A.B, Miami (O.), 38; M.S, Kans. State Col, 40; Ph.D, Wisconsin, 42. Purdue, exp. sta, assoc. prof, 45-.

GRIFFIN, George R(obert), *Chemistry.* Indianapolis, Ind, 9/2/14; m. 38, c. 2. B.S, Indiana, 36; M.A, Boston, 38; Ph.D, Mass. Inst. Tech, 41. R. I. State Col, asst. prof, 48-.

GRIFFIN, Judson R(oy), *Geology, Geography.* Topeka, Ind, 9/10/01; m. 25, c. 2. A.B, Illinois, 25, A.M, 27, Ph.D, 31. West. Ky. State Col. (Bowling Green), prof, 32-.

GRIFFING, Margaret E(lizabeth), *Analytical chemistry.* Lexington, Ky, 8/9/17. B.S, Kentucky, 39, M.S, 40; Ph.D, Purdue, 44. Ethyl Corp, 45-.

GRIFFITTS, F(red) A(lbert), *Chemistry.* Philadelphia, Tenn, 4/11/03; m. 33. B.A, Maryville Col, 25; M.S, Iowa State Col, 30; Ph.D, Indiana, 36. Maryville Col, 25-, prof, 37-.

GRIM, R(euben) J(oseph), *Chemistry.* Mt. Vernon, Ind, 9/8/96; m. 21. A.B, A.M, Indiana, 20, Ph.D, 41. New River State Sch, prof, 22-41; W. Va. Inst. Tech, 41-.

GRIMES, Earl Jerome, *Botany.* Russellville, Ind, 1/15/93, died, 21. B.S, Illinois, 18. William and Mary Col, assoc. prof, 19-21.

GRISWOLD, R(ettig) Arnold, *Surgery.* Peru, Ind, 4/17/98; m. 23, c. 4. B.A, Harvard, 21; M.D, Louisville, 25. Louisville, 32-, prof. and head dept, 38-.

GROS, James R(ichard), *Physics.* Delphi, Ind, 12/26/15; m. 42, c. 1. B.S.E, Michigan, 40. Naval Proving Grounds, 40-, head ballistic aerodynamic range, 47-.

GROVE, Vernon G(uy), *Mathematics.* Mentone, Ind, 12/15/90; m. A.B, Olivet Col, 16; M.A, Kentucky, 18; Ph.D, Chicago, 25. Mich. State Col, 20-, prof, 36-.

GRUBB, Henry M(arion), *Physics.* Rockville, Ind, 9/21/11; m, c. 1. B.S, Purdue, 33, Ph.D, 38. Standard Oil Co. Ind, 38-.

GRUBBS, S(amuel) B(ates), *Medicine.* Indianapolis, Ind, 2/11/71, died, 42. A.B, Michigan, 93; M.D, Columbia, 96. U. S. Pub. Health Serv, 97-42.

GRUMMANN, H(erbert) R(ichard), *Applied mathematics.* Indianapolis, Ind, 5/5/95; m. 22. A.B, Nebraska, 15; A.M, Minnesota, 24. Washington (St. Louis), 24-, asst. prof, 31-41; aerodynamicist, 41-.

GUARD, A(rthur) T(homas), *Plant anatomy.* Lawrenceburg, Ind, 10/2/97; m. 24, c. 3. A.B, DePauw, 24; M.S, Purdue, 29, Ph.D, 35. Ind. high schs, 25-28; Purdue, 28-, asst. and assoc. prof, 36-.

GUCKER, Frank T(homson), Jr, *Physical chemistry* (starred). Philadelphia, Pa, 4/8/00; m. 25, c. 2. A.B, Haverford Col, 20, A.M, 21; Ph.D, Harvard, 25. Northwestern, 29-47, prof, 42-47; Indiana, chm. dept, 47-. Aerosols.

GUENTHER, Paul E(rnest), *Mathematics.* La Porte, Ind, 5/25/15; m. 42, c. 1. B.S, Wisconsin, 37; A.M, Harvard, 38, Ph.D, 41. Case Inst. Tech, 41-, asst. prof, 45-.

GUERNSEY, Donald L(ewis), *Chemistry.* Vincennes, Ind, 2/2/04; m. 29, c. 2. B.S, Illinois, 26. Mass. Inst. Tech, 38-.

GUERNSEY, E(rnest) W(illiam), *Chemistry.* Vincennes, Ind, 5/1/96; m. 18, c. 2. B.S, Illinois, 18; M.S, American U, 22; Ph.D, Geo. Washington, 24. U. S. Dept. Agr, 19-26; Gas, Elec. Light & Power Co, consol, 26-.

GUNCKEL, James E(ugene), *Botany.* Indianapolis, Ind, 6/8/14; m. 41, c. 2. B.S, Miami (O.), 38; M.A, Harvard, 41, Ph.D, 45. Rutgers, asst. prof, 46-.

GUNSALUS, I(rwin) C(lyde), *Bacteriology.* Sully Co, S. Dak, 6/29/12; m. 35, c. 5. B.S, Cornell, 35, M.S, 37, Ph.D, 40. Indiana, prof, 47-50.

GUSTIN, William, *Mathematics.* Detroit, Mich, 1/19/18; m. 42, c. 2. A.B, California L. A, 40, Ph.D, 47. California L. A, instr. meteorol, 42-45; Indiana, asst. prof, 47-.

GUTERMUTH, C(linton) R(aymond), *Wildlife management.* Ft. Wayne, Ind, 8/16/00; m. 22. Notre Dame, 18-19; State Dept. Cons, Ind, dir. div. ed, 34-42, div. fish and game, 40-42; Am. Wildlife Inst. (Wash, D. C.), sec, 45-46, v. p, 46-. Detailed survey of Indiana lakes.

GUTH, E(ugene), *Physics.* Budapest, Hungary, 8/21/05, nat, 43; m. 47, c. 1. Ph.D, Vienna, 28. Notre Dame, 37-, prof, 43-45, res. prof, 45-, dir, Polymer Physics Lab, 41-.

GUTHRIE, Andrew, *Nuclear physics.* Ladysmith, B. C, Can, 7/22/15. B.A, British Columbia, 34; M.S, Purdue, 39, Ph.D, 41. California, radiation labs, 42-, partner in chg. res, 45-.

GUTHRIE, James Erwin, *Veterinary medicine.* Adams, Ind, 9/26/10; m. 31, c. 1. D.V.M, Ohio State, 38. Dr. Hess & Clark, Inc, 40-.

GUTHRIE, Ned, *Organic chemistry.* Shelby Co, Ill, 2/8/99; m. 25, c. 4. B.S, Ill. Wesleyan, 25; M.S, Illinois, 26. Hanover Col, head dept, 26-.

GUTOWSKY, H(erbert) S(ander), *Physical chemistry.* Bridgman, Mich, 11/8/19. A.B, Indiana, 40; California, 46; Ph.D, Harvard, 49. Illinois, instr, 48-.

GUTSCHICK, Raymond Charles, *Geology.* Chicago, Ill, 10/3/13; m. 39, c. 2. B.S, Illinois, 38, M.S, 39, Ph.D, 42. Notre Dame, asst. prof, 47-.

GUYMON, James F(uqua), *Food chemistry.* Vermilion, Ill, 7/13/11; m. 35. B.S, Rose Poly. Inst, 33; Ph.D, Illinois, 39. California, 39-, asst. prof, 47-.

GWYNN, Bernard H(enry), *Chemistry.* Bellefontaine, O, 9/24/15; m. 45, c. 1. A.B, Ohio Northern, 37; M.S, Purdue, 39, Ph.D, 42. Gulf Res. & Develop. Co, 42-.

HAAS, Alma Marie Bell, *Botany.* Albany, Ind, 8/23/99, died, 30. A.B, Indiana, 22, A.M, 24.

HAAS, Arthur Erich, *Physics.* Austria, 4/30/84, died, 41. Ph.D, Vienna, 06. Notre Dame, prof, 30-41.

HACKER, Sidney G(uy), *Mathematics.* Denver, Colo, 12/19/08; m. 31. A.B, Colorado, 29, A.M, 30; Ph.D, Princeton, 34. Indiana, instr, 34-37; State Col. Wash, asst. prof, 37-.

HACKETT, Martha, *Education.* Bluffton, Ind, 3/9/84. A.B, West. Col, 07; M.D, Rush, 13. Hackett Med. Col. (Canton, China), pres, 14-23; Ginling Col. (Nanking, China), 25-28.

HACKLEMAN, J(ay) C(ourtland), *Agronomy.* Carthage, Ind, 6/24/88. B.S, Purdue, 10; A.M, Missouri, 12. Illinois, 19-, prof, 36-. Soy-beans; alfalfa.

HACKNEY, J(ames) C(arlyle), *Chemistry.* Liberty, N. C, 5/23/12. B.S, Guilford Col, 32; M.S, N. C. State Col, 38. Indiana, instr, 46-.

HADLEY, John M(illard), *Clinical psychology.* Alton, Kans, 4/5/15; m. 39, c. 2. A.B, Ft. Hays Kans. State Col, 37, M.A, 38; Ph.D, Iowa, 39. Purdue, assoc. prof, 46-.

HADLEY, Laurence, *Mathematics.* Danville, Ind, 3/19/76, died, 46. B.S, Earlham Col, 02; A.M, Michigan, 07, Ph.D, 15. Earlham, 02-18, prof, 15-18; Purdue, 18-, prof, 24-.

HADLEY, S(tephen) M(arshall), *Astronomy.* West Newton, Ind, 60. Ph.B, Penn (Ia.), 84; A.M, Harvard, 93; Ph.D, Wisconsin, 04. Penn, prof, 87-, dean, 09-.

HAENISCH, Edward L(auth), *Chemistry.* Chicago, Ill, 8/9/11; m. 41, c. 1. S.B, Chicago, 30, Ph.D, 35. Wabash Col, chm. dept, 49-.

HAGEN, Charles W(illiam), Jr, *Botany.* Spartanburg, S. C, 3/21/18; m. 42, c. 3. A.B, Cornell, 39; Ph.D, Indiana, 44. Indiana, 46-, asst. prof, 47-.

HAGER, Glenn F(rederick), *Chemistry.* Barrington, Ill, 10/22/19; m. 39, c. 3. B.A, DePauw, 40; Ph.D, Wisconsin, 43. Dupont Co, 45-.

HAGGARD, Howard W(ilcox), *Physiology.* La Porte, Ind, 7/19/91. Ph.B, Yale, 14, M.D, 17. Yale, 18-, prof, 38-.

HAGGERTY, Helen Ruth, *Psychology.* Anderson, Ind, 4/24/03. B.S, Minnesota, 24; M.A, Columbia, 29, Ph.D, 38. Adj. Gen. Off, Dept. Army, 47-.

HAGUE, Stella M(ary), *Botany.* Waterloo, Ind, 1/23/72. A.B, Indiana, 93; Ph.D, Chicago, 12. Illinois, 15-40.

HAHNERT, William F(ranklin), *Zoology.* Logansport, Ind, 10/6/01; m. 28, c. 1. A.B, DePauw, 27; Ph.D, Hopkins, 31. Ohio Wesleyan, 34-, prof, 47-.

HAINES, William J(oseph), *Biochemistry.* Crawfordsville, Ind, 9/26/19; m. 43. A.B, Wabash Col, 40; Ph.D, Illinois, 43. Upjohn Co, 43-.

HALE, Arthur Slone, *Biology.* Prestonburg, Ky, 8/1/13; m. 42, c. 2. A.B, Berea Col, 37; M.A, Indiana, 42. Indiana, instr, 37-41; U. S. Fish & Wildlife Surv, 42-.

HALE, Cecil H(arrison), *Chemistry.* Kilgore, Tex, 6/12/19; m. 45. B.S, Trinity (Tex.), 38; M.S, Louisiana, 40; Ph.D, Purdue, 48. Standard Oil Develop. Co, 40-.

HALE, George C(lyde), *Chemical engineering.* Sullivan Co, Ind, 9/29/91, died, 48. A.B, A.M, Indiana, 15, Ph.D, 25. Indiana, instr, 15-17; Picatinny Arsenal, 21-48.

HALE Joseph B., *Chemistry.* Richmond, Ind, 9/17/07; m. 36, c. 2. A.B, Oberlin Col, 28; Ph.D, Illinois, 33. Earlham Col, instr, 33-36; Eastman Kodak, 36-.

HALL, A(llen) S(trickland, Jr), *Mechanical engineering.* Greensboro, Vt, 12/12/17; m. 40. B.S, Vermont, 38; Ph.D, Purdue, 46. Purdue, 39-, assoc. prof, 48-.

HALL, A(rthur) Fletcher, *Dermatology.* Indianapolis, Ind, 12/29/01. B.S, Yale, 23; M.D, Harvard, 27. South. California, assoc. clin. prof, 42-.

HALL, Arthur G(raham), *Mathematics.* Memphis, Mich, 12/9/65, died, 25. B.S, Michigan, 87; Ph.D, Leipzig, 02. High schs. (La Porte, Ind.), 87-91; Michigan, prof, 08-25.

HALL, J(ohn) Frank, *Oral surgery.* Quaker City, O, 4/1/99; m. 27. D.D.S, Pittsburgh, 33, B.S, 34. Indiana, prof, 42-.

HALL, J(oseph) Alfred, *Chemistry.* Orange Co, Ind, 8/16/96; m. 23, c. 1. B.A, Wisconsin, 21, M.S, 22, Ph.D, 34. Calif. Fruit Growers Exch, 23-27; U. S. Forest Serv, forest prods. lab, 30-42; Pacific Northwest Forest Exp. Sta, dir, 45-.

HALL, Robert E(arl), *Chemical engineering.* Indianapolis, Ind, 12/27/19; m. 41, c. 2. B.S, Purdue, 40, Ph.D, 48. Procter & Gamble, 47-.

HALLAUER, Frank J(oseph), *Engineering.* Wauseon, O, 3/20/85; m. 19. B.S, Purdue, 10, C.E, 14. U. S. Forest Serv, 29-47.

HALLOCK, Louis L(uther), *Chemistry.* Ashmore, Ill, 5/31/17; m. 41. A.B, Ill. Col, 39; M.S, Iowa, 41, Ph.D, 43. Commercial Solvents Corp. (Terre Haute), 47-.

HALLSTED, A(lanson) L(ola), *Agriculture.* Eagletown, Ind, 1/13/79; m. 33. B.S, Kans. State Col, 03. U. S. Dept. Agr, 09-45.

HAMANN, Cecil Boyce, *Biology.* East Shelby, N. Y, 3/5/13; m. B.S, Taylor, 37; M.S, Purdue, 39, Ph.D, 42. Asbury Col, prof, 45-.

HAMER, Homer G(uy), *Genito-urinary surgery.* Bellefontaine, O, 5/27/80; m. 12, c. 2. M.D, Indiana, 04. Indiana, 04-, assoc. prof, 21-27, clin, prof, 27-.

HAMILL, William H(enry), *Chemistry.* Oswego, N. Y, 6/13/08; m. 34, c. 4. B.S, Notre Dame, 30, M.S, 31; Ph.D, Columbia, 36. Notre Dame, assoc. prof, 38-.

HAMILTON, F(rancis) M(arion), *Psychology.* Markle, Ind, 1/21/67; m. 04. A.B, Indiana, 97, A.M, 01; Ph.D, Columbia, 07. Ind. schs, 88-95; N. Y. Teacher Training Col, prof, 06-32.

HAMILTON, John Orr, *Physics.* Princeton, Ind, 9/4/67, died, 38. B.S, Chicago, 01. Kans. State Col, 01-38, prof, 08-38.

HAMILTON, R(obert) G(ilbert), *Geology, Geophysics.* Shirley, Ind, 8/2/05. A.B, DePauw, 31; M.S, Iowa, 33, Ph.D, 35. Schlumberger Well Surveying Corp, 35-.

HAMLETT, G(eorge) W(hitfield), *Zoology, Anatomy.* Italy, Tex, 7/7/00. A.B, Texas, 22, A.M, 23, Ph.D, 27. Indiana, asst. prof, 27-33; Louisiana, 46-, assoc. prof, 48-.

HAMMOND, A(lonzo) J(ohn), *Engineering.* Thorntown, Ind, 4/23/69, died, 44. B.S, Rose Poly. Inst, 89, M.S, C.E, D.E, 33. City eng, Indianapolis, 01-10; asst. chief eng, Indianapolis Union Sta. Co, 14-22; cons. eng, 28-44. Ind. Eng. Soc. (pres.).

HAMMOND, L(ester) D(avisson), *Chemistry.* Petersburg, Ind, 6/23/83. A.B, Indiana, 07; A.M, Wisconsin, 10, Ph.D, 16. U. S. Bur. Standards, 19-.

HAMPTON, H(arold) C(lark), *Chemistry,* Richmond, Ind, 11/9/89; m. 20, c. 1. A.B, A.M, Stanford, 20. Wisconsin, instr. bot, 21-27; Canada Int. Paper Co, 27-.

HAMPTON, Herbert Elwood, *Agronomy.* Andrews, Ind, 4/7/04; m. 27, c. 1. B.S, Texas, 37; Ph.D, Missouri, 43. A. & M. Col. (Tex.), agron, 38-, prof, 47-.

HANAWALT, Francis W(ayland), *Mathematics, Astronomy.* Monticello, Ind, 2/22/59, died, 33. A.B, DePauw, 84, A.M, 02. DePauw, instr, 93-98.

HANCOCK, E(dward) L(ee), *Mechanics.* Shullsburg, Wis, 6/28/73, died, 11. B.S, Wisconsin, 98, M.S, 01. Purdue, 02-09, asst. prof, 03-09.

HANCOCK, J(ohn) O(gden), *Physics.* Wilmington, Del, 3/24/13. S.B, Haverford Col, 34, A.M, 36; Ph.D, Purdue, 40. Purdue, 46-, assoc. prof, 48-.

HANCOCK, John W(illiam), *Psychology.* Jeffersonville, Ind, 8/23/12; m. 39, c. 1. B.S, Purdue, 34, M.S, 35, Ph.D, 39. Illinois, asst. prof, 47-.

HANEY, Fred(erick) H(igbee), *Chemical engineering.* Peru, Ind, 7/29/10; m. 35, c. 2. B.S, Ch.E, Purdue, 32. Shell Oil Co. (Ind.), 35-40; Johnson & Johnson Co, dir. res, 43-.

HANKINSON, T(homas) L(eroy), *Ichthyology.* Valparaiso, Ind, 4/12/76, died, 35. B.S, Mich. Agr. Col, 98. Ill. State Nor. Sch, prof, 02-19; Roosevelt Wild Life Exp. Sta, Syracuse, 19-35.

HANKS, John H(arold), *Bacteriology, Immunology.* Fowlerton, Ind, 9/16/06; m. c. 4. B.S, Allegheny Col, 28; Ph.D, Yale, 31. Harvard, med. sch, 39-.

HANLEY, William Andrew, *Engineering.* Greencastle, Ind, 12/13/86; m. 14, c. 4. B.S, Purdue, 11, hon. D.Eng, 37. Eli Lilly & Co, to v. p, 11-.

HANN, Harry W(ilbur), *Zoology.* Onward, Ind, 11/19/85; m. 18, c. 1. A.B, Indiana, 17; M.A, Michigan, 21, Ph.D, 26. Michigan, 28-, asst. prof, 29-.

HANNA, C(linton) R(ichards), *Electrical engineering.* Indianapolis, Ind, 12/17/99; m. 26, c. 2. B.S.E.E, Purdue, 22, E.E, 26, hon. D.Eng, 45. Westinghouse, assoc. dir. res. lab, 44-.

HANNA, Ulysses S(herman), *Mathematics.* Selma, Ind, 1/16/65, died, 40. A.B, Indiana, 95, A.M, 98; Ph.D, Pennsylvania, 05. Ind. high schs, 90-94; Indiana, 95-36, prof, 22-36.

HANNING, Flora (May), *Home economics.* Evansville, Ind, 5/2/99. A.B, Evansville Col, 26; M.S, Wisconsin, 30; Ph.D, Iowa State Col, 44. Evansville Col, 26-44; Wisconsin, to prof, 44-.

HANSELL, Clarence W(eston), *Electrical engineering.* Medaryville, Ind; m. 23, c. 3. B.S, Purdue, 19. Radio Corp. Am, 20-, res. labs, 42-.

HANSELL, Grant E., *Radio engineering.* Medaryville, Ind, 6/17/09; m. 31, c. 2. B.S, Purdue, 31. R.C.A, 31-.

HANSEN, Albert A(ugust), *Botany.* Copenhagen, Denmark, 4/3/91. B.S, Pa. State Col, 13, M.S, 16. Purdue, exp. sta, 21-.

HARBAN, Arthur Alan, *Chemistry.* Chicago, Ill, 1/3/21; m. 42, c. 2. B.S, Purdue, 42, M.S, 43, Ph.D, 48. Standard Oil Co. Ind, 48-.

HARDESTY, John O(liver), *Chemistry.* Westfield, Ill, 10/11/99; m. 29, c. 2. A.B, DePauw, 24; M.S, Mich. State Col, 28. U. S. Dept. Agr, 30-.

HARDIN, Lowell S(tewart), *Agricultural economics.* Knightstown, Ind, 11/16/17; m. B.S.A, Purdue, 39; Ph.D, Cornell, 43. Purdue, 43-, assoc. prof, 46-.

HARDING, C(harles) Francis, *Electrical engineering.* Fitchburg, Mass, 9/11/81, died, 42. B.S, Worcester, 02, E.E, 10. Purdue, dir. elec. lab, 08-42.

HARDING, Myron S(idney), *Ophthalmology.* Shelbyville, Ind, 11/8/96; m. 19, c. 2. B.S, Indiana, 19, M.D, 21. Indiana, assoc. prof, 43-.

HARDY, Max B(rown), *Pomology.* Pendleton, Ind, 1/18/02. B.S.A, Purdue, 26; M.S, Iowa State Col, 28. U. S. Dept. Agr, 31-.

HARDY, P(aul) E., *Physical chemistry.* Mahnomen, Minn, 11/13/16. B.A, St. Olaf Col, 37; M.S, Purdue, 39, Ph.D, 41. Standard Oil Develop. Co, 42-47.

HARGER, Rolla N(eil), *Chemistry.* Decatur, Kans, 1/14/90; m. 17, c. 3. A.B, Washburn Col, 15; A.M, Kansas, 17; Ph.D, Yale, 22. Indiana, sch. med, 22-, prof, 33-. Drunkmeter.

HARGITT, Cha(rle)s W(esley), *Zoology* (starred). Near Lawrenceburg, Ind, 3/28/52, died, 27; m. 77, c. 3. B.S, Moores Hill Col, 77; Ph.D, Ohio (Athens), 90. Moores Hill, prof, 85-88; Miami, prof, 88-91; Syracuse, prof, 91-21.

HARGITT, Geo(rge) T(homas), *Zoology* (starred). Fairfield, Ind, 2/13/81; m. 30, c. 2. Ph.B, Syracuse, 02; A.M, Nebraska, 03; Ph.D, Harvard, 09. Syracuse, 13-29, prof, 19-29; Duke, dir. grad. studies, 30-.

HARGITT, T(homas) F(rederick), *Physics.* Shelby Co, Ind, 9/30/81, died, 48; m. A.B, Indiana, 20, A.M, 21, Ph.D, 24. Ill. Wesleyan, prof, 24-48.

HARKER, Robert James, *Chemical engineering.* Dubuque, Ia, 2/6/22; m. 45. B.S, Iowa State Col, 43. Commercial Solvents Corp, 43-, group leader, 47-.

HARMAN, Mary T(heressa), *Zoology.* Odon, Ind, 8/21/78. A.B, Indiana, 07, A.M, 09, Ph.D, 12. Kans. State Col, 12-47, prof, 21-47.

HARMON, J(esse), *Chemistry.* Lexington, Ind, 9/30/06; m. 37, c. 5. A.B, Hanover Col, 28; A.M, Illinois, 30, Ph.D, 33. Dupont Co, 33-.

HARMON, Paul M(ontgomery), *Physiology.* Elwood, Ind, 7/20/92; m. 14, c. 1. A.B, Indiana, 14, A.M, 15, Ph.D, 20. Indiana, 18-, prof, 38-, chm. dept, 41-.

HARNED, Roger Lee, *Biochemistry.* Orange Co, Ind, 7/10/16; m. 40, c. 2. A.B, Miami (O.), 39; M.S, Mich. State Col, 41. Commercial Solvents Corp, 47-.

HARNESS, George T(homas, Jr), *Electrical engineering.* Galveston, Ind, 3/14/06; m. 29, c. 2. B.S, Calif. Inst. Tech, 28, Ph.D, 33. South. California, head dept, 47-.

HARNEY, John Hopkins, *Mathematics.* Bourbon Co, Ky, 2/20/1806, died, 68. A.B, Miami, 27, 31. Indiana, instr, 28-32; Hanover Col, prof, 32-35; editor, Louisville, 37-44.

HARPER, Claude, *Animal husbandry.* Ligonier, Ind, 9/29/91; m. 15, c. 3. B.S, Purdue, 14; M.S, Illinois, 18. Purdue, exp. sta, 18-, ch, 45-.

HARPER, R(obert) B(rinton), *Chemical engineering.* Evansville, Ind, 2/28/82, died, 45. B.S, Armour Inst. Tech, 05, Ch.E, 09. Peoples Gas Light & Coke Co. (Chicago), v. p. in chg. res, 30-45.

HARRELL, E(dgar) G(raham), *Mathematics.* Jefferson Co, Ind, 9/4/06. A.B, Hanover Col, 30; A.M, Iowa, 31, Ph.D, 35. Wis. State Teachers Col, 35-.

HARRELL, M(arshall) A(llen), *Geology.* Smithville, Ind, 2/21/00; m. 28, c. 3. A.B, Indiana, 21, Ph.D, 33. Cons. geol, 40-. Author, *Ground Water in Indiana,* 33.

HARRINGTON, Harold David, *Botany.* DeMotte, Ind, 3/14/03; m. B.A, Iowa State Teachers Col, 27; Ph.D, Iowa, 34. Colo. A. & M. Col, 35-, assoc. prof, 43-.

HARRIS, Charles O(verton), *Engineering mechanics.* Altamount, Ill, 6/22/09; m. 34, c. 4. B.S, Illinois, 30, M.S, 32; Sc.D, Michigan, 41. Notre Dame, prof, 46-.

HARRIS, Chauncy D(ennison), *Geography.* Logan, Ut, 1/31/14; m. 40, c. 1. A.B, Brigham Young, 33; B.A, Oxford, 36, M.A, 43 (Rhodes Scholar, Oxford and London, 34-37); Ph.D, Chicago, 40. Indiana, 39-41; Chicago, 43-, prof, 47-.

HARRIS, Dale B(enner), *Psychology.* Elkhart, Ind, 6/28/14. A.B, DePauw, 35; Ph.D, Minnesota, 41. Minnesota, 41-, prof, 48-.

HARRIS, David V., *Geology.* Hoopeston, Ill, 1/27/10; m. 37, c. 3. B.A, DePauw, 32; M.S, Northwestern, 35. Colo. A. & M. Col, assoc. prof, 46-.

HARRIS, Forest K(laire), *Physics.* Gibson Co, Ind, 8/26/02; m. 25, c. 1. B.A, Oklahoma, 21, M.S, 23; Ph.D, Hopkins, 31. U. S. Bur. Standards, 25-.

HARRIS, Paul N(oel), *Pathology.* New Albany, Ind, 9/26/06; m. 43, c. 2. B.A, Virginia, 26; M.D, Vanderbilt, 30. Eli Lilly & Co, 37-.

HARRIS, William J(ames), Jr, *Metallurgy.* South Bend, Ind, 6/17/18; m. 44. B.S, M.S.E, Purdue, 40; Sc.D, Mass. Inst. Tech, 48. U. S. Naval Res. Lab, 47-.

HARROLD, John C(oate), *Hydraulic engineering.* Kokomo, Ind, 4/9/05; m. 31. B.S, Harvard, 27. Harvard, instr, 27-29; U. S. A, off. ch. eng, 36-.

HART, John F(rancis), *Chemistry.* Indianapolis, Ind, 4/1/10; m. 34, c. 2. A.B, Arizona, 31; M.S, Washington (Seattle), 32, Ph.D, 35. Longview Fibre Co. (Wash.), 35-, tech. supt, 46-.

HART, Merrill C(urtis), *Pharmaceutical chemistry.* Kendallville, Ind, 6/6/91; m. 21, c. 1. B.Sc, Kalamazoo Col, 13; M.Sc, Chicago, 15. Upjohn Co. (Mich.), 14-, v. p. and dir. res, 44-.

HART, S(imeon) T(hompson), *Industrial engineering.* Farmington, Conn, 2/3/78; m. 10, 38, c. 4. B.S.M.E, Purdue, 08, M.E, 11. Syracuse, prof, 20-.

HARTER, Richard Stephen, *Psychology.* Mattoon, Ill, 2/13/99; m. 42. B.A, Ind. Cent. Col, 26; M.A, Indiana, 27, Ph.D, 29. Temple, 28-, asst. prof, 35-.

HARTLEY, C(harles) P(ickney), *Agriculture.* Osgood, Ind, 7/7/70; m. 05, c. 3. B.Sc, Kans. State Col, 92, M.S, 99. U. S. Dept. Agr, 99-30, in chg. corn invests, 06-30.

HARTLEY, David D(ouglass), *Chemistry.* Marshfield, Mo, 8/25/05; m. 32. B.S, Drury Col, 27, M.A, 30; Ph.D, Indiana, 32. Mid-Continent Petrol. Corp, 32-.

HARTMAN, John D(aniel), *Horticulture.* Orwigsburg, Pa, 8/21/09. B.S, Pa. State Col, 30; M.S, Cornell, 31, Ph.D, 33. Purdue, 37-48.

HARTMAN, Robert J(ames), *Chemistry.* Ft. Wayne, Ind, 10/18/06. A.B, Indiana, 28, A.M, 29, Ph.D, 30. Indiana, 30-42, assoc. prof, 41-42.

HARTSELL, Stanley Eugene, *Bacteriology.* Benton Harbor, Mich, 4/20/05; m. 29, c. 1. B.S, Mich. State Col, 27; M.S, Yale, 29, Ph.D, 33. Purdue, 36-, prof, 48-.

HARTSUCH, Bruce E(dwin), *Organic chemistry.* Kendallville, Ind, 12/23/88; m. 13, c. 3. A.B, Wabash Col, 10. Mich. State Col, to assoc. prof, 11-.

HARTSUCH, Paul J(ackson), *Chemistry.* Kendallville, Ind, 9/17/02; m. 25, c. 2. B.S, Mich. State Col, 24, Chem.E, 34; M.S, Chicago, 28, Ph.D, 35. Lithographic Tech. Found, 48-.

HARTZLER, H(arrod) Harold, *Physics.* Ft. Wayne, Ind, 4/7/08; m. 33, c. 3. A.B, Juniata Col, 30; Ph.D, Rutgers, 34. Goshen Col, 37-, prof, 43-.

HARVEY, Castle J. C., *Geology.* Wabash, Ind, 3/20/05; m. 33. B.S, Illinois, 32. Ind. Hy. Dept, jr. eng, 32-33; Amerada Petrol. Corp, 35-43; Atlantic Ref. Co. (Tex.), 43-, dist. geol, 48-.

HARVEY, Cecil C(laude), *Biochemistry.* Jeffersonville, Ind, 2/22/06; m, c. 2. B.S, Louisville, 29; M.S, Chicago, 31; Ph.D, Illinois, 38. Elgin State Hosp, 44-.

HARVEY, R(odney) B(eecher), *Plant physiology* (starred). Monroeville, Ind, 5/26/90, died, 45. Ph.C, Purdue, 12, Sc.D, 39; B.S, Michigan, 15; Ph.D, Chicago, 18. Eli Lilly & Co, 12-13; Minnesota, prof, 20-45.

HARWOOD, Arthur A(lbert), *Chemistry.* Grant Co, Wis. B.S, Wisconsin, 23, M.S, 26, Ph.D, 29. Valparaiso, 29-, assoc. prof, 34-.

HASEMAN, Charles, *Mathematics.* Linton, Ind, 9/27/80, died, 31; m. 17. A.B, Indiana, 03, A.M, 06; Ph.D, Gottingen, 07. Indiana, 07-09, asst. prof, 08-09; Nevada, prof, 10-31.

HASEMAN, L(eonard), *Entomology.* Linton, Ind, 3/26/84; m. 10, c. 4. A.B, Indiana, 05, M.A, 07; Ph.D, Cornell, 10. Missouri, 10-12.

HASEMAN, W(illiam) P(eter), *Physics.* Linton, Ind, 5/4/78, died, 32. A.B, Indiana, 03, A.M, 04; Ph.D, Pennsylvania, 07. Indiana, 04-09, asst. prof, 07-09; Oklahoma, prof, 09-19.

HASKELL, R(ay) N(elson), *Mathematics.* Vevay, Ind, 3/15/99; m. 30, c. 2. B.S, Chicago, 22; Ph.D, Rice Inst, 30. Texas, 31-, assoc. prof, 43-.

HASKINS, Geo(rge) W(illiam), *Engineering.* Waterville, O, 3/11/92. B.S, Purdue, 16. Purdue, prof, aeronaut. eng, 28-37.

HASS, Henry B(ohn), *Organic chemistry* (starred). Huntington, O, 1/25/02; m. 21, c. 4. B.A, Ohio Wesleyan, 21; M.A, Ohio State, 23, Ph.D, 25. Purdue, 28-49, prof, 35-49; Gen. Aniline & Film Corp, 49-.

HATCH, Lewis F(rederic), *Organic chemistry.* Puyallup, Wash, 8/21/12; m. 37, c. 2. B.S, State Col. Wash, 33; M.S, Purdue, 34, Ph.D, 37. Texas, 40-, assoc. prof, 45-.

HATCHER, David B(urnell), *Organic chemistry.* Van Buren, Ind, 1/13/18; m. 40, c. 2. A.B, Manchester Col, 39; Ph.D, Purdue, 44. Libbey-Owens-Ford Glass Co, 46-49.

HATFIELD, J(ames) E(lisha), *Chemistry.* Washington, Ind, 9/22/08; m. 34, c. 3. A.B, Indiana, 32, Ph.D, 36; M.S, Lafayette Col, 33. Willard Storage Battery Co, 42-, works mgr, 45-.

HATFIELD, John D(empsey), *Physical chemistry.* Sneedville, Tenn, 8/18/19; m. 43, c. 3. B.A, Tennessee, 38, M.S, 39; Ph.D, Purdue, 42. Tenn. Valley Authority, 43-.

HATHAWAY, Arthur S(tafford), *Mathematics* (starred), *Physics.* Keeler, Mich, 9/15/55, died, 34; m. 85. B.S, Cornell, 79; Hopkins, 80-84. Rose Poly. Inst, prof, 91-20.

HATHAWAY, A(rthur) S(tafford), *Civil engineering.* Baltimore, Md, 6/26/86; m. 17, c. 4. B.S, Rose Poly. Inst, 08. Northwestern, asst. prof, 26-.

HATT, Robert T(orrens), *Mammalogy.* Lafayette, Ind, 7/17/02; m. 29, c. 2. B.S, Michigan, 23; A.M, Columbia, 25, Ph.D, 32. Cranbrook Inst. Sci, dir, 35-.

HATT, W(illiam) K(endrick), *Civil engineering.* Fredericton, N. B, Can, 10/10/68. B.A, New Brunswick, 87, M.A, 98, Ph.D, 01; C.E, Cornell, 91. Purdue, 93-38, prof, 01-38. Dept. Cons, Ind, state eng, 22-38. Am. Concrete Inst. (pres, 17-19; Turner gold medal); Ind. Eng. Soc. (pres, 07).

HATTON, Roger E(ugene), *Chemistry.* Brookville, O, 3/5/18; m. 41, c. 3. A.B, Omaha, 40; M.S, Purdue, 42, Ph.D, 44. Monsanto Chem. Co, 46-.

HAUCK, Charles W(esley), *Agricultural economics.* Terre Haute, Ind, 11/19/91; m. 19. B.S, Ohio State, 16, M.Sc, 27, Ph.D, 39. Ohio State, asst. prof, 27-40, prof, 41-49.

HAUEISEN, B(atist) R(itzinger), *Electrochemistry.* Indianapolis, Ind, 4/29/00; m. 23, c. 2. Sc.B, Mass. Inst. Tech, 23. Citizens Gas Co. (Ind.), chem. eng, 23-25; Naval Ordnance Plant (Indianapolis), head res. dept, 45-.

HAUGE, Sigfred M(elanchton), *Biochemistry.* Estherville, Ia, 5/3/95; m. 23, c. 1. B.A, St. Olaf Col, 18; M.S, Minnesota, 21, Ph.D, 26. Purdue, exp. sta, 23-, res. assoc, 25-.

HAUPT, Curtis R(aymond), *Physics.* Williamsport, Ind, 10/6/03; m. A.B, Colo. Col, 26; M.A, California, 28, Ph.D, 30. U. S. Navy Electronics Lab, 46-, head radio-radar branch, 47-.

HAUROWITZ, Felix (Michael), *Biochemistry.* Prague, Czechoslovakia, 3/1/96; m. 25, c. 2. Wurzburg, 20; M.D, Prague, 22. Istanbul, prof, 39-48; Indiana, prof, 48-.

HAUSCH, Walter R(ichard), *Chemistry.* Akron, O, 10/26/17; m. 43, c. 1. B.S, Akron, 40; M.S, Cincinnati, 42; Ph.D, Purdue, 46. Firestone Tire & Rubber Co, 47-.

HAUSMANN, B(ernard) A(ndrew), *Mathematics.* Cleveland, O, 1/24/99. A.B, Gonzaga, 23, M.A, 25; Ph.D, Yale, 37. West Baden Col. (Ind.), prof, 44-.

HAVENS, R(ichard) A(aron), *Food technology.* Kokomo, Ind, 5/27/09; m. 33. Butler, instr. food microanal, 31-33; Superior Labs. (Indianapolis), owner and dir, 33-.

HAWES, William W(isner), *Chemistry.* Columbus, Ind, 4/12/02; m. 29, c. 2. B.S, Purdue, 24; Sc.M, Brown, 27, Ph.D, 30. Mass. Inst. Tech, 29-31; U. S. Naval Radiol. Defense Lab. (San Francisco Naval Shipyard), 47-.

HAWKINS, George Andrew, *Mechanical engineering.* Denver, Colo, 12/11/07; m. 31, c. 1. B.S, Purdue, 30, M.S, 32, Ph.D, 35. Purdue, 32-, prof, 42-, asst. dean grad. sch, 47-, Westinghouse res. prof. heat transfer, 44-.

HAWKINS, Myron B., *Mechanical engineering.* Indianapolis, Ind, 5/8/20; m. 42, c. 1. B.S.M.E, Purdue, 42. Bendix Prods. Div. (Ind.), processing eng, 42-44; Scientific Serv, Inc, ch. eng, 48-.

HAWORTH, Leland J(ohn), *Physics.* Flint, Mich, 7/11/04; m, c. 2. A.B, Indiana, 25, A.M, 26; Ph.D, Wisconsin, 31. Ind. high sch, 26-28; Brookhaven Natl. Lab, 47-, dir, 48-.

HAXBY, Robert O(zias), *Physics.* Minneapolis, Minn, 5/14/12; m. 39. B.E.E, Minnesota, 33, M.S, 34, Ph.D, 38. Purdue, assoc. prof, 46-.

HAY, Earl D(owning), *Mechanical engineering.* New Goshen, Ind, 9/19/86; m. 13, c. 4. B.S, Rose Poly. Inst, 10, M.S, 15, M.E, 21. Iowa State Col, prof, 46-.

HAY, O(liver) P(erry), *Paleontology* (starred). Saluda, Jefferson Co, Ind, 5/22/46, died, 30, m. 70, c. 4. A.B, Eureka, 70, A.M, 73; Ph.D, Indiana, 84. Butler, prof, 83-92; Carnegie Institution, 02-30; Ind. Geol. Surv, 91-94. Ind. Acad. Sci. (pres, 91). Pleistocene vertebrates in Indiana.

HAY, W(illiam) P(erry), *Zoology.* Eureka, Ill, 12/8/71, died, 49. B.S, Butler, 91, M.S, 92. Biol. Soc. Wash. (pres, 16).

HAYDEN, Alice H(azel), *Pharmaceutical chemistry.* Seattle, Wash, 1/17/09. Ph.C, Oregon State Col, 28, B.S, M.S, 29; Ph.D, Purdue, 32. Purdue, 30-34; Rowland Marine Prods. Corp, 37-.

HAYEK, Mason, *Chemistry.* St. Paul, Minn, 3/28/20; m. 44. B.Chem, Minnesota, 41; M.A, Indiana, 43, Ph.D, 47. Jos. E. Seagram & Sons (Ind.), 41-45; Dupont Co, 47-.

HAYES, Robert Arthur, *Organic chemistry.* Kendallville, Ind, 6/29/20; m. 46, c. 1. B.A, Col. Wooster, 42; Ph.D, Maryland, 48. Firestone Tire & Rubber Co, 48-.

HAMMOND, Rufus, *Naturalist.* Clarksburg, W. Va, 6/5/1805, died, 86. Brookville, Ind, 26-86. Made a geological survey of Franklin Co, 69, including mammals and birds.

HAYNES, E(dith), *Bacteriology.* Norwich, Kans, 11/18/92. A.B, Emporia Col, 15; A.M, Wisconsin, 21, Ph.D, 27. Indiana, med. center, 27-, instr. clin. path, 47-.

HAYNES, Elwood, *Inventing.* Portland, Ind, 10/14/57, died, 25; m. 87. B.S, Worcester Poly. Inst, 81; Hopkins, 84-85. Teacher of sciences, Ind. Norm. (Portland), 85-86; Ind. Natural Gas & Oil Co, field supt, 90-01; Haynes Stellite Co, pres, 12-20; Haynes Automobile Co, pres, 98-25. Discovered tungsten chrome steel, 81, alloy of chromium and nickel, 97, alloy of cobalt and chromium, 00; designed and constructed a horseless carriage, 93-94, the oldest American automobile in existence (at Smithsonian Inst.); introduced aluminum in automobile engine, 95; invented and built rotary valve gas engine, 03; discovered "stainless steel," 11.

HAYNES, J(ames) L., *Agronomy.* Paris, Ill, 5/19/10; m. 39. B.A, Indiana, 33, M.A, 34; Ph.D, Rutgers, 47. Ohio State, exp. sta, assoc. prof, 47-.

HAYNES, J(ames) Richard, *Physics.* Evansville, Ind, 7/4/09; m. 41, c. 1. B.S, Kentucky, 30. Bell Tel. Labs, 30-.

HAYNES, Walter, *Engineering.* Vincennes, Ind, 5/11/80; m. 06, c. 2. B.S, Stanford, 07; M.S, Mass. Inst. Tech, 15. Oregon Inst. Tech, dean eng, 19-38.

HAYWARD, J(ames) W(illiam), *Agriculture.* Angola, Ind, 7/20/98; m. 24, c. 3. B.S, Purdue, 21; M.S, Notre Dame, 28; Ph.D, Wisconsin, 35. Notre Dame, assoc. prof, 21-, head dept, 25-32.

HAZARD, C(lifton) T(errell), *Mathematics.* Wilmington, O, 1/9/85; m. 14, 45, c. 1. B.S, Wilmington Col, 06; A.M, Indiana, 13. Purdue, 13-, prof, 42-.

HAZARD, Katharine E(lizabeth), *Mathematics.* Lafayette, Ind, 7/5/15. B.S, Purdue, 36, M.S, 37; Ph.D, Chicago, 40. Rutgers, 45-, asst. prof, 47-.

HAZEL, George R(ichard), *Medicine.* Logansport, Ind, 4/12/07; m. 40, c. 1. B.S, Indiana, 29, M.D, 31. Abbott Labs, dir. dept. med. and clin. res, 35-.

HAZEL, H(erbert) C(arroll), *Physics.* Harrodsburg, Ind, 9/26/99; m. 20, c. 4. A.B, Indiana, 22, A.M, 26, Ph.D, 33. Ind. schs, 20-26; Indiana, 26-38, asst. prof, 37-38.

HEADLEE, T(homas) J., *Entomology.* Headlee, Ind, 2/13/77, died, 46. A.B, Indiana, 03, A.M, 04; Ph.D, Cornell, 06. Ind. schs, 95-02; Rutgers, prof, 12-46; state entom, N. J. Exp. Sta. (Rutgers), 12-46.

HEADLEE, W(illiam) Hugh, *Parasitology.* Morristown, Ind, 6/15/07; m. 37, c. 2. A.B, Earlham Col, 29; M.S, Illinois, 33; Ph.D, Tulane, 35. Purdue, 35-43, asst. prof, 42-43; Indiana, sch. med, 43-, assoc. prof, 46-.

HEARD, Llewellyn, *Organic chemistry.* Macon, Ga, 12/30/01; m. 24, c. 2. B.S, Emory, 28; M.S, Georgia, 32; Ph.D, Hopkins, 37. Standard Oil Co. Ind, 36-.

HEATH, Harold, *Zoology* (starred). Vevay, Ind, 6/5/68; m. 97, c. 3. A.B, Ohio Wesleyan, 93; A.M, Ph.D, Pennsylvania, 98. Stanford, 94-, prof, 09-33, emer, 33-.

HEATON, Vincent Edward, *Physics.* Greencastle, Ind, 4/7/97; m. 21, c. 3. A.B, Indiana, 19, A.M, 23. U. S. Bur. Standards, 27-.

HECHT, Adolph, *Plant Genetics.* Chicago, Ill, 7/25/14; m. 42, c. 1. B.S, Chicago, 36, M.S, 37; Ph.D, Indiana, 42. State Col. Wash, 47-, assoc. prof, 49-.

HECK, J(oseph) E(mery), *Chemistry.* Connersville, Ind, 6/26/04; m. 30, c. 3. A.B, DePauw, 26; M.S, Purdue, 29, Ph.D, 33. Purdue, 26-33; Armco Corp, sr. res. eng, alloys, 37-.

HECKMAN, Samuel B., *Psychology.* Union, O, 5/27/70; m. 18. Ph.B, Earlham Col, 93; A.B, Harvard, 94; A.M, Pennsylvania, 05, Ph.D, 06. Col. City N. Y, prof, 08-39.

HEDGECOCK, Le Roy D(arien), *Speech pathology.* Roy, N. Mex, 3/7/13; m. 41, c. 1. B.S, Washington (St. Louis), 36; M.A, Colo. State Col. Ed, 39; Ph.D, Wisconsin, 49. Teacher, Ind. State Sch. Deaf, 36-38; Indiana, speech clinician, 44-46.

HEDRICK, E(arle) R(aymond), *Mathematics* (starred). Union City, Ind, 9/27/76, died, 43; m. 01, c. 8. A.B, Michigan, 96; A.M, Harvard, 98; Ph.D, Gottingen, 01. Missouri, prof, 03-43.

HEDRICK, Ross Melvin, *Organic chemistry.* West Salem, Ill, 4/27/21. B.S, Illinois, 43; A.M, Indiana, 44, Ph.D, 47. Monsanto Chem. Co, 47-.

HEIDENRIECH, William Charles, *Chemical engineering.* Terre Haute, Ind, 5/28/11; m. 32, c. 2. B.S, Rose Poly. Inst, 33. Quaker Maid Co. (Ind.), 33-34; Can. Resins & Chems, Ltd, plant mgr, 47-.

HEIDER, Rudolph L(ouis), *Organic chemistry.* Methuen, Mass, 4/29/13; m. 42, c. 1. B.S, Northeastern, 36; M.S, Purdue, 38, Ph.D, 41. Monsanto Chem. Co, 41-, group leader, 47-.

HEIL, Vernon E(verett), *Electrical engineering.* Indianapolis, Ind, 8/5/12; m. 43. E.E, Cincinnati, 35. P. R. Mallory & Co. (Indianapolis), res. eng, 35-.

HEIM, H(oward) J(ohn), *Electronics.* Dawson, Nebr, 2/16/97; m. 24, c. 4. B.S, Nebraska, 22, E.E, 38. Purdue, 25-, exp. sta, 29-, res. assoc, 39-.

HEIMLICH, L(ouis) F(rederick), *Botany.* Reynolds, Ind, 4/13/90, died, 28. B.S, Purdue, 14, M.S, 16; Ph.D, Wisconsin, 26. Purdue, 17-26, asst. prof, 22-26; Valparaiso, head dept, 26-28.

HEINEN, J(ohn) M(ichael), Jr, *Chemical engineering.* Fowler, Ind, 8/30/15; m. 42, c. 3. B.S, Purdue, 37. Continental Can Co, 37-.

HEINS, Albert Edward, *Mathematics.* Boston, Mass, 9/7/12; m. 39, c. 1. B.S, Mass. Inst. Tech, 34, M.S, 35, Ph.D, 37. Purdue, 35-42, asst. prof, 40-42; Carnegie Inst. Tech, assoc. prof, 46-.

HEINZMAN, Walter P(hilip), *Mathematics.* Noblesville, Ind, 5/12/02; m. 26, c. 3. A.B, DePauw, 25; M.S, N. Mex. Col, 29; A.M, Illinois, 31. N. Mex. Col, 25-, prof, 47-.

HEISER, Charles Bixler, Jr, *Botany.* Cynthiana, Ind, 10/5/20; m. 44, c. 1. A.B, Washington (St. Louis), 43, M.S, 44; Ph.D, California, 47. Indiana, asst. prof. and curator herbarium, 47-.

HEISEY, Lowell V(ernon), *Chemistry.* Ping Ting Chow, China, 10/1/19; m. 45. A.B, Manchester Col, 41; M.S, Purdue, 44, Ph.D, 47. McPherson Col, 47-, assoc. prof, 49-.

HEISIG, Carl P(hilip), *Agricultural economics.* Evansville, Ind, 11/27/07; m. 35, c. 3. B.S, State Col. Wash, 32; M.S, Wisconsin, 38. U. S. Dept. Agr, Bur. Agr. Econ, 38-, head div. farm mgt. & costs, 46-.

HELD, Omar C(onrad), *Psychology.* Santa Claus, Ind, 8/14/96; m. 32, c. 1. A.B, Indiana, 23, A.M, 24; Ph.D, Pittsburgh, 31. Pittsburgh, prof. and dir. veterans guidance, 46-.

HELLERMAN, Leslie, *Chemistry.* Hammond, Ind, 2/5/96; m. 20, c. 1. B.S, Chicago, 17, Ph.D, 23. Chicago, res. instr, 23-27; Hopkins, 27-, assoc. prof, 46-.

HELLMAN, Henry M(artin), *Chemistry.* Norrfors, Sweden, 7/4/20. B.S, Indiana, 43; M.S, Purdue, 45, Ph.D, 47. N. Y. U, instr, 47-.

HELMER, Oscar M(arvin), *Chemistry.* Portland, Ore, 3/13/00; m. 28, c. 1. B.S, Ore. State Col, 22; M.S, Illinois, 24; Ph.D, Chicago, 27. Lilly Labs, Indianapolis Gen. Hosp, head dept. biochem, 31-; Indiana, sch. med, lect. biochem, 43-.

HELWIG, Elson B(owman), *Pathology.* Pierceton, Ind, 3/5/07; m, c. 3. B.S, Indiana, 30, M.D, 32. Washington (St. Louis), sch. med, asst. prof, 39-46; Army Inst. Path, 46-.

HEMINWAY, Caroline E(lla), *Geology.* Corning, N. Y, 7/12/04. A.B, Mt. Holyoke Col, 25; A.M, Cornell, 28; Ph.D, Indiana, 41. Smith Col, 28-, assoc. prof, 40-.

HENDERSON, Courtland M., *Chemical engineering.* Sullivan, Ind, 9/2/15; m. 40, c. 2. B.Ch.E, Purdue, 40. Columbian Enameling & Stamping Co. (Terre Haute), 40-44; Linde Air Prods. Co, res. lab, 44-.

HENDERSON, W(illiam) J(ames), *Physics.* Wingham, Ont, Can, 8/15/10. B.A, Queen's, 31, M.A, 32; Ph.D, Cambridge, 35. Purdue, asst. prof, 37-.

HENDRICKS, James O(wen), *Physical chemistry.* Waynetown, Ind, 9/3/09; m. 36, c. 3. A.B, Wabash Col, 31; Ph.D, Illinois, 36. Minn. Mining & Mfg. Co, 36-, head colloid sect, 42-47, asst. dir. res, 47-.

HENDRICKS, Jesse C(ody), *Physics.* Franklin, Ind, 2/10/97; m. 18, c. 3. B.S, Franklin Col, 25; M.A, Indiana, 28, Ph.D, 30. Franklin, prof, 47-.

HENDRY, Geo(rge) W(hiting), *Agriculture.* Indianapolis, Ind, 1/22/85. B.S, Cornell, 13. California, asst. prof. agron, 13-.

HENGSTEBECK, R(obert) J(oseph), *Chemical engineering.* Detroit, Mich, 9/19/18; m. 43, c. 2. B.Ch.E, Detroit, 41; M.S, Carnegie Inst. Tech, 42. Standard Oil Co. Ind, 42-, group leader, 46-.

HENKE, C(lyde) O(verbeck), *Physical chemistry.* Stendal, Ind, 8/30/98. A.B, Indiana, 19, A.M, 20, Ph.D, 22. Indiana, asst. prof, 23-25; Dupont Co, 31-.

HENN, Arthur W(ilbur), *Ichthyology, Zoology.* Evansville, Ind, 3/8/90. A.B, Indiana, 14, A.M, 15; Columbia, 15-17. Carnegie Museum, curator, 22-, ed. publications, 36-.

HENNEL, Cora B., *Mathematics.* Evansville, Ind, 1/21/86, died, 47. A.B, Indiana, 07, A.M, 08, Ph.D, 12. Indiana, 08-47, prof, 36-47.

HENNES, Robert G(raham), *Civil engineering.* Lake Linden, Mich, 7/7/05; m, c. 4. B.S, Notre Dame, 27; M.S, Mass. Inst. Tech, 28. Washington (Seattle), 34-, prof, 47-.

HENNION, George F(elix), *Organic chemistry.* South Bend, Ind, 8/23/10; m. 33, c. 4. B.S, Notre Dame, 32, M.Sc, 33, Ph.D, 35. Notre Dame, 35-, prof, 45-.

HENSEL, Franz R(obert), *Physical metallurgy.* Riesa-Groeba, Germany. 6/9/04; m. 29. Dipl, Freiberg, 27; Sheffield, 27-28; Dr. Ing, Charlottenburg, 29. Westinghouse Res. Lab, 29-34; P. R. Mallory & Co. (Indianapolis), 34-, v. p, 46-.

HENSHAW, Frederic Rich, *Dentistry.* Alexandria, Ind, 10/8/72, died, 38; m. 97, c. 1. D.D.S, Ind. Dental Col, 97. Ind. Dental Col, dean, 14-25; Indiana, dean sch. dent, 25-38.

HERED, William, *Organic chemistry.* Bethlehem, Pa, 5/29/10; m. 42, c. 1. B.S, Chicago, 36, Ph.D, 39. Gary Col, 37-41; Indiana, exten. (Calumet Center), 41-, asst. prof, 46-.

HERMAN, David Theodore, *Psychology.* Chicago, Ill, 4/1/16; m. 42, c. 1. A.B, Indiana, 40, M.A, 42, Ph.D, 47. Indiana, instr, 45-47.

HERRICK, Allyn M(arsh), *Forestry.* Syracuse, N. Y, 7/15/12; m. 35, c. 3. B.S, Syracuse, 34, M.F, 35; Ph.D, Michigan, 45. Purdue, assoc. prof, 37-.

HERRIN, R(aymond) C(lyde), *Physiology.* Castleton, Ind, 7/9/00; m. 34, c. 4. B.S, Purdue, 22; M.S, Wisconsin, 25, Ph.D, 28; M.D, Chicago, 33. Wisconsin, 28-, prof, 46-.

HERRMANN, George R(udolph), *Internal medicine.* Ft. Wayne, Ind, 11/20/94; m. 21, c. 3. B.S, Michigan, 16, M.S, M.D, 18, Ph.D, 22. Texas, prof, 31-.

HERRMANN, Louis G(eorge), *Surgery.* Ft. Wayne, Ind, 6/25/00; m. 29, c. 4. A.B, Michigan, 21; M.D, Washington (St. Louis), 24. Cincinnati, col. med, 32-, assoc. prof, 40-.

HERSH, J(oseph) M(artin), *Chemistry.* South Bend, Ind, 8/1/07; m. 37. B.Sc, Purdue, 30, Ph.D, 35; M.Sc, Cincinnati, 32. Cities Serv. Oil Co, 46-.

HERSHEY, Robert L(andis), *Chemical engineering.* Anderson, Ind, 12/11/01; m. 28, c. 4. S.B, Mass. Inst. Tech, 23, S.M, 24, Sc.D, 35. Dupont Co, 36-, asst. gen. mgr, 48-.

HERSHMAN, Joseph B(ernard), *Physics.* Rensselaer, Ind, 6/9/00; m. 22, c. 2. B.S, Valparaiso, 22; M.A, Indiana, 28, Ph.D, 32. Valparaiso, 22-27; Ind. State Teachers Col, asst. prof, 29-30; Radio Inst, dir, 34-40, pres, 41-44; Valparaiso Tech. Inst, 44-.

HERTWIG, Waldemar R., *Chemical engineering.* San Francisco, Calif, 9/28/20; m. 46, c. 1. B.S, Columbia, 42, Ch.E, 43. Standard Oil Co. Ind, 43-.

HERTZLER, Silas, *Psychology*. Baltimore, Md, 7/27/88; m. 24, c. 5. B.A, Goshen Col, 13; B.D, Yale, 17, Ph.D, 27; M.A, Columbia, 18. Goshen Col, 20-, prof, 24-.

HERZOG, George, *Anthropology*. Budapest, Hungary, 12/11/01; m. Royal Acad. Music (Budapest), 17-19; Hochschule fur Musik (Berlin), 20-22; Kaiser Friedrich Wilhelms U, 22-24; Ph.D, Columbia, 31. Indiana, prof. folk and primitive music, 48-.

HESLER, L(exemuel) R(ay), *Plant pathology, Mycology*. Veedersburg, Ind, 2/20/88; m. 14. A.B, Wabash Col, 11; Ph.D, Cornell, 14. Tennessee, prof, 19-, dean col. lib. arts, 34-.

HESS, Lawrence G(eorge), *Chemistry*. Humboldt, Kans, 2/25/16; m. 43, c. 2. B.S, Notre Dame, 38, M.S, 39, Ph.D, 41. Carbide & Carbon Chems. Corp, 41-.

HESS, Walter N(orton), *Zoology*. Great Valley, N. Y, 5/1/90; m. 24, c. 2. A.B, Oberlin Col, 13; A.M, Cornell, 16, Ph.D, 19. DePauw, prof, 17-28; Hamilton Col, prof, 28-. Ind. Acad. Sci. (v. p, 28).

HESSLER, Robert, *Medicine*. Cincinnati, O, 6/7/61, died, 42. A.B, Indiana, 90; M.D, Med. Col. Ind, 92. Active in Ind. Acad. Sci. from its foundation (pres, 1906); author *Dusty Air and Ill Health*.

HESTER, William F(rederic), *Organic chemistry*. Indianapolis, Ind, 5/3/04; m. 27, c. 5. A.B, DePauw, 25, hon. D.Sc, 48; A.M, Harvard, 27, Ph.D, 29. Rohm & Haas Co. (Phila.), 29-49.

HESTON, Joseph C(arter), *Clinical psychology*. Pataskala, O, 1/17/09; m. 34, c. 2. A.B, Muskingum Col, 31; M.A, Ohio State, 38, Ph.D, 41. DePauw, assoc. prof. and dir. bur, 41-.

HEUSE, E(dward) O(tto), *Chemistry*. Madison, Ind, 3/25/79; m. 08, c. 2. B.S, Hanover Col, 00; M.S, Illinois, 07, Ph.D, 14. South. Methodist, prof, 18-.

HEYDA, J(ames) F(rancis), *Mathematics*. St. Louis Park, Minn, 9/2/13; m. 43, c. 1. B.S, Chicago, 35; M.A, Mich. State Col, 37; Ph.D, Illinois, 40. U. S. Naval Ordnance Plant (Indianapolis), 47-.

HEYER, Robert H(arry), *Metallurgy*. Ripon, Wis, 7/2/07; m. 29, c. 1. B.S, Minnesota, 29, M.S, 30. Purdue, instr, 30-37; Armco Steel Corp, 41-.

HEVNER, Kate McNaughton (Mrs. H. Mueller), *Psychology*. Westmoreland, Pa, 11/1/98. A.B, Wilson Col, 20; A.M, Columbia, 23; Ph.D, Chicago, 28. Indiana, 36-, dean women, 38-.

HIATT, Gordon D(ales), *Chemistry*. Danville, Ill, 2/17/11; m, c. 3. A.B, DePauw, 33; A.M, Illinois, 34, Ph.D, 36. Eastman Kodak (Rochester, N. Y.), 36-.

HIBBEN, J(ames) H., *Physical chemistry*. Indianapolis, Ind, 5/14/97. B.S, Illinois, 20, M.S, 22, Sc.D, 24. Carnegie Institution, 28-39; U. S. Tariff Comn, ch. chem. div, 39-.

HIBSHMAN, Henry J(acob), *Chemical engineering*. Ambler, Pa, 6/28/14; m. 40, c. 4. B.S, Pa. State Col, 36, M.S, 37; Ph.D, Purdue, 40. Standard Oil Develop. Co, 40-.

HICKEY, Richard J(ames), *Bacteriological chemistry*. Rock Island, Ill, 9/18/13; m. 41, c. 3. B.S, Illinois, 35; Ph.D, Iowa State Col, 41. Commercial Solvents Corp. (Terre Haute), 41-.

HICKEY, Robert B(randon), *Chemical engineering*. Leipsic, O, 9/27/11; m. 40, c. 1. B.S, Purdue, 34. Tenn. Eastman Corp, 34-, supt, 44-.

HICKMAN, C(larence) N(ichols), *Physics*. Lizton, Ind, 8/16/89; m. 15, c. 1. A.B, Winona Col, 14; M.A, Clark, 18, Ph.D, 22. Ind. high schs, 14-16; Winona Col, instr, 16-17; Bell Tel. Labs, 30-.

HICKMAN, Cleveland, *Zoology, Cytology*. Bristol, W. Va. A.B, Salem Col, 17; A.M, Michigan, 20; Ph.D, Princeton, 28. DePauw, 24-, prof, 30-, head dept, 40-.

HICKOK, Robert Baker, *Agricultural engineering*. Ypsilanti, Mich, 4/18/10; m. 32, c. 2. B.S, Mich. State Col, 32. U. S. Dept. Agr, Soil Conservation Serv, 34-; Purdue, sr. soil cons, 48-.

HICKS, R(ussell) Lowell, *Organic chemistry*. Goreville, Ill, 7/27/13; m. 42, c. 2. B.Ed, South. Ill. Nor, 34; M.S, Illinois, 36, Ph.D, 39. Franklin Col, prof, 44-.

HIDY, Phil H(arter), *Biochemistry*. North Manchester, Ind, 2/11/15; m. 39, c. 2. B.S, Indiana, 38, A.M, 42, Ph.D, 44. Commercial Solvents Corp. (Terre Haute), 47-.

HIERS, Glen S(efton), *Organic chemistry*. Connersville, Ind, 8/17/96; m. 20, c. 2. B.S, Miami (O.), 19; M.A, Northwestern, 21; M.S, Illinois, 24, Ph.D, 26. Collins & Aikman Corp. (Phila.), ch. chem, 34-.

HIESTAND, W(illiam) A(ndrew), *Physiology*. Madison, Wis, 12/3/03; m. 28. A.B, Wisconsin, 25, A.M, 28, Ph.D, 30. Purdue, 30-, assoc. prof, 36-46, prof, 46-.

HIGGINBOTHAM, M(argaret) W(ebster), *Bacteriology*. Brandon, Man, Can, 7/18/02. B.A, British Columbia, 23; Sc.D, Hopkins, 37. South Bend Med. Found, 46-.

HIGGINS, Edgar P(hillip), *Chemistry*. Ft. Wayne, Ind, 3/9/13; m. 41, c. 3. A.B, Indiana, 38, M.A, 39. Dupont Co, 39-.

HIGGINS, Thomas James, *Electrical engineering*. Charlottesville, Va, 7/4/11; m. 42, c. 1. E.E, Cornell, 32, M.A, 37; Ph.D, Purdue, 41. Purdue, 37-41; Wisconsin, prof, 48-.

HIGHLANDS, Matthew E(dward), *Bacteriology*. Huntington, Ind, 6/19/05; m. 32. A.B, Maine, 28; S.M, Mass. Inst. Tech, 34. Maine, exp. sta, assoc. food technol, 47-.

HIGHTOWER, Pleasant R(oscoe), *Psychology*. Glezen, Ind, 11/8/86; m. 34. A.B, Ind. Cent. Col, 14; M.A, Indiana, 17; Ph.D, Iowa, 29. Ind. rural schs, 09-12; P. I. schs, 19-22; Butler, 29-33; Ind. Cent. Nor. Col. (Danville), prof, 34-46, dean, 40-46, pres, 44-46.

HIGINBOTHAM, Noe, *Botany*. Sullivan Co, Ind, 9/6/13; m. 37. A.B, Butler, 35; Ph.D, Columbia, 40. Notre Dame, asst. prof, 45-47; State Col. Wash, assoc. prof, 48-.

HILDEBRAND, Samuel F(rederick), *Zoology*. Stendal, Ind, 8/15/83, died, 49. A.B, Ind. State Teachers Col, 10; Dr.P.H, Georgia, 25. U. S. Fisheries Lab. (Beaufort, N. C.), dir, 24-31; U. S. Fish & Wildlife Serv, 31-49.

HILDRETH, Gertrude H(owell), *Psychology*. Terre Haute, Ind, 10/11/98. A.B, Northwestern Col, 20; A.M, Illinois, 21; Ph.D, Columbia, 25. Columbia, Teachers Col, Lincoln sch, 25-45.

HILE, Ralph (Oscar), *Zoology*. Plainville, Ind, 3/18/04; m. 34. A.B, Ind. Cent. Col, 24; Ph.D, Indiana, 30. Ind. high schs, 24-26; U. S. Fish & Wildlife Serv, 37-, aquatic biol, 47-.

HILL, Erle G(ladstone), *Metallurgy*. Santa Ana, Calif, 4/21/90. B.S, California, 13. Lukens Steel Co, dir. res, 34-38; Carnegie Ill. Steel Co. (Gary), 38-, asst. gen. supt, 41-.

HILL, Hubert M(ack), *Chemistry*. Sheridan, Mich, 8/3/18; m. 44, c. 1. B.S, Alma Col, 40; M.S, Connecticut, 42; Ph.D, Purdue, 47. Eastman Kodak, 47-.

HILL, Philip, *Organic chemistry*. E. St. Louis, Ill, 3/13/17; m. 42, c. 3. A.B, Illinois, 37; Ph.D, Ohio State, 41. Standard Oil Co. Ind, 43-, group leader, 47-.

HILL, Ralph M(adison), *Chemistry*. Richmond, Ind, 11/25/10. A.B, Battle Creek Col, 30; M.S, Ga. Sch. Tech, 32; Ph.D, Wisconsin, 37. Standard Oil Develop. Co, 37-.

HILL, R(obert) T(owner), *Anatomy*. Brookings, S. Dak, 6/6/05; m. 29, c. 2. B.S, S. Dak. State Col, 28; M.S, Kans. State Col, 29; Ph.D, Iowa, 32. Indiana, 37-, assoc. prof, 40-49.

HILL, Uno Theodore, *Analytical chemistry*. Hancock, Mich; m, c. 3. B.S, Illinois, 33; Purdue, 42-43. Inland Steel Co. (Ind.), 40-.

HINE, Maynard K(iplinger), *Dentistry*. Waterloo, Ind, 8/25/07; m. 32, c. 3. D.D.S, Illinois, 30, M.S, 32; Rochester, 34-36. Illinois, instr. to assoc. prof. oral path, 36-44; Indiana, prof, 44-, dean, 45-.

HINMAN, Jack J(ones), Jr, *Chemistry, Civil and sanitary engineering*. Indianapolis, Ind, 10/14/88; m. 15, c. 3. A.B, Butler, 11, M.S, 15; B.S, Iowa, 37, C.E, 38. State Bd. Health, Ind, 06-11; city chem, Indianapolis, 11-14; Iowa, assoc. prof. sanita, 21-48.

HINTON, H(enry) D(avid), *Organic chemistry*. Mulberry Grove, Ill, 2/27/95; m. 26, c. 2. B.S, Ill. Col, 19; M.S, Chicago, 26; Ph.D, Notre Dame, 30. Notre Dame, 30-, prof, 40-.

HIRE, Cha(rle)s, *Physics*. Columbia City, Ind, 12/1/87; m. 20, c. 2. A.B, Indiana, 15, M.A, 17, Ph.D, 27. Teacher, 07-14; Indiana, 19-25, prof, 45-; Murray State Teachers Col, 25-43.

HIROSE, R(uby) S(ato), *Biochemistry, Bacteriology*. Kent, Wash, 8/30/04. B.S, Washington (Seattle), 28, M.S, 29; Ph.D, Cincinnati, 32. Indiana, instr, 48-49; U. S. Veterans Hosp, ch. bact, 49-.

HITCH, E(mmet) F(rancis), *Chemistry*. Vienna, Md, 9/3/82; m. 12, c. 3. A.B, Washington Col. (Md.), 04, A.M, 07; Ph.D, Cornell, 12. Dupont Co. (Del.), 18-47; Purdue, prof, 47-.

HIXON, R(alph) M(alcolm), *Phytochemistry*. Crown Point, Ind, 5/7/95; m. 21, c. 5. B.S, Iowa State Col, 17; Ph.D, Wisconsin, 21. Iowa State Col, 23-, prof, 29-34, res. prof. exp. sta, 34-, dean grad. col, 48-.

HOAGLIN, Raymond I., *Organic chemistry*. Crawfordsville, Ind, 2/8/13; m. 41, c. 2. A.B, Wabash Col, 35, M.S, Purdue, 38, Ph.D, 42. Carbide & Carbon Chem. Corp, 41-.

HOBART, Floyd B., *Chemical engineering*. West Lebanon, Ind, 1/25/97; m. 22, c. 3. B.S, Illinois, 20, M.S, 21. Battelle Mem. Inst, chem. super, 30-49.

HOBBS, Clinton H(oward), *Plant physiology*. Indianapolis, Ind, 1/16/15; m. 44, c. 2. B.S.A, Purdue, 36, M.S, 39, Ph.D, 42. Kent State, asst. prof, 45-.

HOBBS, J(ames) A(rthur), *Soils*. East Kildonan, Man, Can, 12/5/14; c. 1. B.S.A, Manitoba, 35, M.Sc, 40; Ph.D, Purdue, 48. Manitoba, prof. soils, 48-.

HOBBS, Lindsey M(aurice), *Organic chemistry*. Apex, N. C, 11/22/09; m. 40, c. 3. B.S, The Citadel, 31; M.S, Alabama, 32; Ph.D, Chicago, 38. Standard Oil Co. Ind, 46-, group leader, 47-.

HOBROCK, Raymond Henry, *Physics*. Ft. Wayne, Ind, 9/24/00; m. 35, c. 1. B.Sc, Purdue, 24, M.Sc, 27; D.Ing, Aix-la-Chapelle, 30. Purdue, 24-26, res. eng, exp. sta, 26-28; Bundy Tubing Co, dir. labs, 35-40, v. p. in chg. res, 40-.

HOBSON, Jesse Edward, *Electrical engineering.* Marshall, Ind, 5/2/11; m. 34, c. 1. B.S, Purdue, 32, M.S, 33; Ph.D, Calif. Inst. Tech, 35. Armour Res. Found, dir, 44-48; Stanford Res. Inst, exec. dir, 48-.

HOBSON, R(ichard) W(illiam), *Chemistry.* Ft. Wayne, Ind, 3/10/13; m. 39, c. 1. B.S, Indiana, 38, M.A, 39, Ph.D, 41. Goodyear Tire & Rubber Co, 41-.

HOCKEMA, F(rank) C., *Engineering.* Shadeland, Ind, 3/25/92; m. 20, c. 3. B.S, Purdue, 18, M.S, 23; D.Ed, Indiana, 47. Purdue, 20-, prof, 32-, asst. to pres, 34-43, v. p, 44-.

HOCKER, Carl D(e Witt), *Chemistry.* Rockville, Ind, 10/4/90; m. 17, c. 1. A.B, Wabash Col, 12; Ph.D, Michigan, 15. Bell Tel. labs, 25-47; Union Col. (N. Y.), assoc. prof, 46-.

HOCKETT, Elmer, *Chemistry.* Wabash, Ind, 4/7/87; m. 16. A.B, Wabash Col, 10; M.S, Ohio State, 12. *Chem. Abstracts,* ed, 15-.

HODGE, E(dward) B(utler), *Chemistry.* Fairfield, Ia, 5/9/10; m. 42, c. 3. B.S, Purdue, 31, M.S, 34, Ph.D, 36. Commercial Solvents Corp. (Terre Haute), 35-.

HODGE, Frederick H(umbert), *Mathematics.* O'Fallon, Ill, 12/10/70. A.B, Boston, 94, A.M, 99. Purdue, 19-, asst. prof, 21-40.

HODGE, John M(urray), *Metallurgy.* Worcester, Mass, 9/23/06; m. 39, c. 3. B.S, Purdue, 28, M.S, 31; Carnegie Inst. Tech, 33. Carnegie-Ill. Steel Corp, 33-.

HODGES, Fred Jenner, *Roentgenology.* Anderson, Ind, 12/19/95; m. 20, c. 3. B.S, Wisconsin, 17; M.D, Washington (St. Louis), 19. Michigan, prof, 31-.

HODGES, Paul C(hesley), *Roentgenology.* Anderson, Ind, 1/6/93; m. 18, c. 5. B.Sc, Wisconsin, 19, Ph.D, 24; M.D, Washington (St. Louis), 18. Chicago, 27-, prof, 28-.

HODGES, Ralph D(udley), *Chemical engineering.* Bluff City, Tenn, 6/9/05; m. 28, c. 1. B.S, Va. Poly. Inst, 27. Gen. Elec. (Ft. Wayne), 30-.

HODGSON, Roland, *Biochemistry.* Teton, Idaho, 5/2/16; m. 44, c. 1. B.S, Brigham Young, 38, M.S, 42; Ph.D, Wisconsin, 46. Eli Lilly & Co, 49-.

HODGSON, Thomas Salisbury, *Organic chemistry.* Dayton, O; m. 42, c. 1.. B.A, DePauw, 38; M.Sc, Ohio State, 41. Shell Oil Co, technol, 47-.

HODNETT, Ernest M(atelle), *Organic chemistry.* Hartford, Ala, 2/6/14; m. 39. B.S, Florida, 36, M.S, 39; Ph.D, Purdue, 45. Okla. A. & M. Col, 45-, assoc. prof, 47-.

HODSON, Floyd, *Paleontology.* Newcastle, Ind, 12/29/93; m. 23, c. 1. A.B, Indiana, 20; A.M, Cornell, 22, Ph.D, 26. Standard Oil Co. Venezuela, 22-34; cons. paleont, 34-.

HODSON, Margaret E(lizabeth), *Biology.* Sheridan, Ind, 8/11/10. A.B, B.S, Marion Col, 32; M.A, Michigan, 46. Ind. high schs, 36-42; Marion Col, 42- asst. prof, 46-.

HOEFER, J(acob) A., *Animal husbandry.* Lafayette, Ind, 11/21/15; m. 42, c. 3. B.S.A, Purdue, 37, M.S.A, 40, Ph.D, 46. Purdue, 39-, asst. prof, 46-.

HOEL, Paul G(erhard), *Mathematics.* Iola, Wis, 3/23/05; m. 32, c. 3. B.A, Luther Col, 26; M.A, Minnesota, 29, Ph.D, 33. Rose Poly. Inst, 31-, asst. prof, 35-36; California L. A, 39-, assoc. prof, 46-48, prof, 48-.

HOFF, Melvern Clayton, *Chemistry.* Cleveland, O, 10/12/21; m. 43, c. 1. B.A, Oberlin Col, 43; Ph.D, Ohio State, 48. Standard Oil Co. Ind, 49-.

HOFFER, G(eorge) N(issley), *Plant pathology.* Hummelstown, Pa, 11/20/87; m. 12, c. 3. A.B, Lebanon Valley Col, 09; M.S, Purdue, 11, hon. Sc.D, 39. Purdue, 11-29, assoc. prof, 16-17, assoc. bot, exp. sta, 17-29; Am. Potash Inst, Inc. (Lafayette), 35-.

HOFFMAN, I(ra) C(urtis), *Horticulture.* Auburn, Ind, 2/12/88; m. 20, c. 2. B.S.A, Purdue, 15, M.S.A, 16; Ph.D, Ohio State, 37. Purdue, exp. sta, 20-27; Ohio, exp. sta, 27-.

HOFFMAN, James D(avid), *Mechanical engineering.* Auburn, Ind, 1/23/68, died, 39. B.M.E, Purdue, 90, M.E, 93. Purdue, 90-, prof, 08-, head dept, 17-.

HOFFSTADT, Rachel E(milie), *Botany, Bacteriology.* Madison, Ind, 6/14/86. B.S, Hanover Col, 08; M.S, Chicago, 12, Ph.D, 15, D.Sc, 23. Ind. high schs, 08-11; Washington (Seattle), 23-, prof, 39-.

HOLADAY, William M., *Engineering.* Wilmington, O, 3/20/10; m. 25, c. 3. M.E, Ohio State, 25. Standard Oil Co. Ind, 27-37; Socony-Vacuum Oil Co, 37-, dir. res, 44-.

HOLBERT, James R(ansom), *Agronomy.* Muncie, Ind, 7/18/90; m. 16, c. 2. B.S.A, Purdue, 15, M.S.A, 18; Ph.D, Illinois, 26. U. S. Dept. Agr, 18-43; Funk Bros. Seed Co, v. p, 37-, gen. mgr, 43-.

HOLCOMB, Dysart E(dgar), *Chemical engineering.* Wellington, Tex, 5/1/17; m. 38, c. 2. B.S, Texas Tech. Col, 37; M.S, Michigan, 38, Ph.D, 41. Purdue, asst. prof, 46-.

HOLDER, Ralph C., *Animal nutrition.* Millis, Mass, 2/22/95; m. 20, c. 2. B.S, Mass. State Col, 17. Cent. Soya Co. (Decatur, Ind.), dir. nutrition dept, 42-.

HOLE, Allen David, *Geology*. Bridgeport, Ind, 8/6/66, died, 40. B.S, Earlham Col, 97, A.M, 01; Ph.D, Chicago, 10. Earlham, prof, 00-36, v. p, 18-24; Moore Museum, curator, 05-40; Ind. Geol. Surv, 11, 14, 19.

HOLE, Francis D(oan), *Geology, Soil science*. Muncie, Ind, 8/25/13; m. 41, c. 2. B.A, Earlham Col, 33; M.A, Haverford Col, 34; Ph.D, Wisconsin, 43. Wisconsin, asst. prof. soils, 46-.

HOLE, Winston L(eRoy), *Physics*. Leesburg, O, 7/2/10; m. 40, c. 2. B.A, DePauw, 30; M.A, Wisconsin, 31, Ph.D, 37. Ohio State Res. Found, asst. to dir, 48-.

HOLL, Carl W(aldo), *Organic chemistry*. North Canton, O, 11/16/02; m. 24, c. 4. A.B, Manchester Col, 16; M.S, Ohio State, 21, Ph.D, 23. Manchester, 23-, dean, 27-.

HOLL, D(io) L(ewis), *Mathematics*. North Canton, O, 1/7/95; m. 24, c. 3. A.B, Manchester Col, 17; A.M, Ohio State, 20; Ph.D, Chicago, 25. Iowa State Col, 25-, prof, 34-, head dept, 45-.

HOLLCROFT, Temple R(ice), *Mathematics*. Alton, Ind, 4/8/89; m. 17, c. 1. B.S, Hanover Col, 12, A.B, 14; A.M, Kentucky, 15; Ph.D, Cornell, 17. Wells Col, prof, 20-.

HOLLENBERG, George Jacob, *Botany*. Grand Harbor, N. Dak, 12/5/97; m. 23, c. 4. A.B, La Verne Col, 21; A.M, Manchester Col, 22; Ph.D, Stanford, 33. Redlands, 39-, assoc. prof, 42-45, prof, 45-.

HOLLIS, Ira N(elson), *Marine engineering*. Mooresville, Ind, 3/7/56, died, 30; m. 94, c. 4. Grad, U. S. Naval Acad, 78. U. S. N, 80-93; Harvard, prof, 93-13; Worcester Poly. Inst, pres, 13-25.

HOLLOWELL, E(ugene) A., *Agronomy*. Jamestown, Ind, 12/29/00. B.S, Iowa State Col, 23, M.S, 24; Ph.D, Illinois, 28. U. S. Dept. Agr, prin. agron.

HOLMAN, H(erbert) P(aul), *Organic chemistry*. Vincennes, Ind, 6/14/82; m. 27, c. 1. A.B, Indiana, 03. U. S. Dept. Agr, 08-, sr. chem, 27-.

HOLMAN, Richard M(orris), *Plant physiology*. Pittsburgh, Pa, 1/9/86, died, 35. A.B, Stanford, 02; Ph.D, California, 15. Wabash Col, prof, 17-20; California, 20-35.

HOLMES, Harry N(icholls), *Inorganic chemistry* (starred). Fay, Pa, 7/10/79; m. 09, c. 2. B.S, Westminster Col. (Pa.), 99, M.S, 07, LL.D, 41; Ph.D, Hopkins, 07. Earlham Col, prof, 07-14; Oberlin Col, head dept, 14-45.

HOLMES, M(ajor) E(dward), *Ceramics*. La Grange, Ky, 1/8/82; m. 22, died, 46. A.B, Indiana, 08; A.M, Cornell, 10, Ph.D, 18. Prin, Ind. high schs, 01-06; N. Y. State Col. Ceramics, Alfred, dean, 32-43.

HOLOWENKO, A(lfred) R(ichard), *Mechanical engineering*. Boston, Mass, 12/10/16; m. 44, c. 2. A.B, M.S, Harvard, 38. Purdue, 46-, assoc. prof, 49-.

HOLSCHER, H(arry) H(eltman), *Ceramics*. Linton, Ind, 2/21/07; m. 28, c. 3. B.S, Illinois, 28; M.Sc, Ohio State, 29, Ph.D, 31. Owens Ill. Glass Co, res. eng, 37-.

HOLTOM, Carl, *Mathematics*. Republic City, Kans, 10/27/04; m. 32, c. 1. A.B, Nebraska, 30, A.M, 31; Ph.D, Chicago, 42. Purdue, 31-48, asst. prof, 42-48.

HONAN, Edward M(ark), *Chemistry*. Lebanon, Ind, 9/11/91. A.B, Wabash Col, 13; Ph.D, Michigan, 17. Bell Tel. Labs, 25-30; Western Elec, mgr. elec. res, 41-.

HONESS, Charles W(illiam), *Geology*. Berea, O, 6/28/85; m. 30, c. 1. A.B, Oberlin Col, 12; A.M, Cornell, 15; Ph.D, Columbia, 24. Gulf Ref. Co. (Evansville), 39-.

HONEYWELL, E(arl) R(obert), *Horticulture*. Leoti, Kans, 01. B.S.A, Kans. State Col, 25; M.S, Iowa State Col, 26. Purdue, asst. prof, and assoc. prof. floricult, 27-.

HOOGSTEEN, Harold M(artin), *Physical chemistry*. Moline, Mich, 6/6/16; m. 42. A.B, Calvin Col, 38; Ph.D, Indiana, 42. Indiana, instr, 38-42; Dow Chem. Co, 42-.

HOOK, Robert A(rthur), *Botany*. Lakewood, O, 10/8/16; m. 42. A.B, Oberlin Col, 38; M.Sc, Michigan, 40. Schenley Labs. (Ind.), super, penicillin plant, 46-.

HOOPER, Florence E(verett), *Chemistry*. Union Co, Ky, 12/6/04. B.S, Butler, 26; Ph.D, Iowa State Col, 30. Geo. Washington, asst. prof, 42-.

HOOVER, F(red) W(ayne), *Organic chemistry*. North Manchester, Ind, 9/26/14; m. 46, c. 2. A.B, Manchester Col, 36; M.S, Purdue, 38, Ph.D, 41. Dupont Co, 40-.

HOOVER, Kenneth H(arry), *Organic chemistry*. Albia, Ia, 12/18/96. A.B, Wisconsin, 21. Ind. Wood Preserving Co, 34-36; Commercial Solvents Corp. (Terre Haute), 36-49, mgr. res, 40-42, v. p. in chg. res, 43-49.

HOOVER, O(ra) L., *Chemistry*. Garrett, Ind, 8/11/91; m. 24, c. 1. A.B, 16; A.M, Ohio State, 19, Ph.D, 21. Sugar Grove Mills, mgr, 26-.

HOPKINS, Louis A(llen), *Mathematics*. Danville, Ind, 5/9/81; m. 07, c. 2. A.B, Butler, 05; M.S, Chicago, 06, Ph.D, 15. Michigan, 06-, assoc. prof, 27-.

HOPKINS, T(homas) C(ramer), *Geology*. Center Co, Pa, 5/4/61, died, 35. B.S, DePauw, 87; A.M, Stanford, 92; Ph.D, Chicago, 00. Syracuse, prof, 00-30; Ind. Geol. Surv, 95, 96, 01.

HOPPER, Samuel H(ersey), *Public health.* Boston, Mass, 7/4/11; m. 37, c. 2. B.S, Mass. Inst. Tech, 33, M.S, 34, Ph.D, 37. Indiana, sch. med, assoc. prof, 45-.

HORLACHER, L(evi) J(ackson), *Animal husbandry.* Frankfort, Ind, 6/9/96; m. 18, c. 2. B.S.A, Purdue, 17; M.S, Kans. State Col, 19. Kentucky, instr. to prof, 18-.

HORLACHER, Walter R(awlins), *Genetics.* Frankfort, Ind, 8/4/97; m. 24, c. 2. B.S, Kans. State Col, 20, M.S, 22; Ph.D, Wisconsin, 29. A. & M. Col. (Tex.), 23-36, prof, 30-36; Arkansas, exp. sta, dir, 39-46.

HORNADAY, William T(emple), *Zoology* (starred). Plainfield, Ind, 12/1/54, died, 37; m. 07, c. 1. U. S. Natl. Museum, 82-90; N. Y. Zool. Park, dir, 96-26. Author of 12 books on the larger wild animals.

HORNE, E(dward) Porter, *Psychology.* E. Orange, N. J, 9/12/12; m. 39, c. 3. B.S, Purdue, 35, M.S, 36; Ph.D, Iowa, 38. Fla. State, assoc. prof, 47-.

HORNEY, Amos G(rant), *Chemistry.* Hortonville, Ind, 3/18/07; m. 37. A.B, Earlham Col, 30; M.S, Ohio State, 32, M.A, 33, Ph.D, 37.

HORRALL, Burtis E(lliott), *Dairying.* Decker, Ind, 8/13/96; m. 22, c. 2. B.S.A, Purdue, 21; M.S, Kans. State Col, 28; Ph.D, Wisconsin, 33. Purdue, asst. prof, 31-47; Kraft Foods Co, 47-.

HORRALL, O(nis) H(arrison), *Physiology, Surgery.* Alfordsville, Ind, 10/24/88; m. 13, c. 2. A.B, Ind. State Nor. Col, 13; M.D, Rush, 19; M.S, Chicago, 25, Ph.D, 27. Burlington & Quincy R. R. (Chicago), ch. surgeon.

HORTON, George W(illiam), *Physics.* Chillicothe, Ill, 5/11/96; m. 25, c. 2. B.S, Ill. Wesleyan, 18; M.S, Wisconsin, 22. Wabash Col, head dept, 24-43.

HOSKINS, John H(obart), *Botany.* Carmel, Ind, 1/17/96; m. 31, c. 3. B.S, Earlham Col, 19; M.S, Chicago, 20, Ph.D, 24. Cincinnati, 25-, prof, 37-; Notre Dame, summers, 25-33.

HOSKINS, Walter H(ugh), *Pharmaceutical chemistry.* Indianapolis, Ind, 1/4/13; m. 37, c. 3. A.B, Earlham Col, 34; Ph.D, Chicago, 39. Maltine Co, 40-, med. dir, 44-47, res. dir, 47-.

HOSS, George Washington, *Mathematics.* Brown Co, O, 11/6/1824, died, 06. A.B, Asbury (DePauw), 50, A.M, 53. N. W. Christian (Butler), prof, 56-64; state supt. pub. instr, Ind, 64-68, 74-80; Indiana, prof, 68-71.

HOTTEL, Hoyt C(larke), *Engineering.* Salem, Ind, 1/15/03; m. 29, c. 4. A.B, Indiana, 22; M.S, Mass. Inst. Tech, 24. Mass. Inst. Tech, 28-, assoc. prof, 31-40, prof, 40-.

HOTTEN, Bruce Walter, *Chemistry.* Paris, Idaho, 6/13/18; m. 44, c. 1. B.A, Cincinnati, 41; Ph.D, Purdue, 45. Purdue, 41-43; Calif. Res. Corp, proj. leader, 45-.

HOUGH, Charles R(ussell), *Inorganic chemistry.* Olney, Ill, 7/26/18. A.B, Illinois, 40; Ph.D, Purdue, 47. Poly. Inst. Brooklyn, 46-, asst. prof, 47-.

HOUGHAM, Naomi Mullendore, *Botany.* Franklin, Ind, 12/13/97. A.B, Franklin Col, 21; M.S, Chicago, 28, Ph.D, 34. Franklin, 22-49, prof, 38-49.

HOVDA, O(laf), *Physics.* Dane Co, Wis, 75, died, 42. A.B, Minnesota, 04, A.M, 09; Ph.D, Gottingen, 13. Evansville Col, prof, 19-42.

HOVEY, Edmund O. Died, 77. A.B, Dartmouth Col. Wabash Col, prof. sci, 34-77.

HOVEY, Horace C(arter), *Geology, Anthropology.* Rob Roy, Ind, 1/28/33, died, 14. A.B, Wabash, 53, A.M, 56. Pastor, 56-10. Caverns; subterranean fauna and flora.

HOWARD, Alan, *Electrical engineering.* Washington, D. C, 8/19/05; m. 32, c. 4. B.S, Purdue, 27. Gen. Elec, 27-, div. eng, 47-.

HOWARD, D(elton) T(homas), *Psychology.* South Bend, Ind, 3/23/83. A.B, Lawrence Col, 10; A.M, Illinois, 12; Ph.D, Cornell, 16. Northwestern, 16-, prof, 30-, chm. dept, 35-.

HOWARD, George D(elvigne), *Archeology.* Buenos Aires, Argentina, 9/17/17; m. 40, c. 2. A.B, DePauw, 39; Ph.D, Yale, 45. Boston, 46-.

HOWARD, Louis B(radley), *Chemistry, Food technology.* Bloomington, Ill, 2/5/05; m. 27, c. 2. B.S, Purdue, 27; M.S, Chicago, 28, Ph.D, 31. Bur. Agr. & Indust. Chem, 42-48, ch, 46-48; Illinois, head dept. food technol, 48-.

HOWARD, Robert E(ugene), *Chemical engineering.* Effingham, Ill, 4/10/20; m. 42, c. 2. B.S, Purdue, 40, M.S, 41, Ph.D, 42. Monsanto Chem. Co, 43-, group leader, 47-.

HOWE, Harrison E(stell), *Chemistry* (starred). Georgetown, Ky, 12/15/81, died, 42; m. 05, c. 2. B.S, Earlham, 01; M.S, Rochester, 13, Sc.D, 27. Bausch and Lomb Optical Co, 04-16; A. D. Little Inc, 16-19; Natl. Res. Council, 19-21. Ed, *Indust. and Eng. Chemistry*, 22-42.

HOWE, Howard A(tkinson), *Virus diseases.* Wabash, Ind, 7/29/01; m. 37, c. 2. A.B, Yale, 25; M.D, Hopkins, 29. Hopkins, 29-, assoc. prof, epidemiol, 42-47, adj. prof, 47-.

HOWE, Malverd A(bijah), *Civil engineering.* Northfield, Vt, 12/9/63, died, 41. B.S, Norwich, 82; C.E, Dartmouth Col, 86. Rose Poly. Inst, prof, 87-.

HOWELL, Katharine M(yrta), *Seriology, Bacteriology.* Kouts, Ind. A.B, Chicago, 05; M.D, Rush, 13. Nelson Morris Mem. Inst, 16-46.

HOWELL, L(loyd) B(relsford), *Chemistry.* Piqua, O, 8/29/87; m. 09, c. 4. A.B, Wabash Col, 09; M.S, Illinois, 18, Ph.D, 19. Wabash Col, head dept, 24-.

HOWERTH, Ira Woods, *Education.* Brown Co, Ind, 6/19/60, died, 38; m. 81. A.B, Valparaiso, 85; A.B, Harvard, 93; A.M, Chicago, 94, Ph.D, 98. Teacher, Ind. schs, 85-91; Chicago, 96-12, asst. prof. (sociol.), 02-12; California, prof, 12-18.

HOWLAND, Louis H(arold), *Organic chemistry.* Near Georgetown, Ind, 1/13/02; m. 29, c. 3. B.S, Louisville, 24, M.S, 26; Ph.D, Iowa, 28. U. S. Rubber Co, res. chem, 28-38, chem. div, 38-41, synthetic rubber res, 41-.

HOWLAND, Warren Every, *Hydraulics, Sanitary engineering.* Athens, N. Y, 3/22/00; m. 26, c. 2. S.B, Mass. Inst. Tech, 22; M.S, Purdue, 29; Sc.D, Harvard, 39. Purdue, instr. to prof, 26-.

HOWLETT, B(erton), A(rthur), *Physics.* South Dayton, N. Y, 8/24/91; m. 12, c. 5. B.S, Valparaiso, 13, A.B, 14; S.M, Chicago, 18; Ph.D, Indiana, 24. Valparaiso, instr. to prof, 14-23; Rose Poly. Inst, head dept, 25-.

HSUEH, Chao Wang, *Physics.* Shantung, China, 10/09, m. B.S, Peking, 31; M.S, Calif. Inst. Tech, 39, Ph.D, 44. Naval Ordnance Plant (Indianapolis), 45-.

HUBBARD, Donald M(erton), *Chemistry.* Odon, Ind, 5/17/90; m. 16, c. 2. B.S, Rose Poly. Inst, 12, Ch.E, 22. Prest-O-Lite Battery Co. (Indianapolis), 13-18; Cincinnati, 30-, asst. prof, 48-.

HUBBARD, Robert M(errill), *Chemical engineering.* Indianapolis, Ind, 11/3/09. B.S.E, Michigan, 31, M.S.E, 32, Ph.D, 40. Virginia, 46-, prof, 47-.

HUBER, Charles J(oseph), *Electrical engineering.* Attica, Ind, 8/24/86; m. 14, c. 2. B.S, Purdue, 08, M.S, 11. United States Testing Co, in chg. res, 32-43; Johnson & Johnson, develop. eng, 43-46.

HUBERT, Alfred W(illiam), *Chemical engineering.* Indianapolis, Ind, 8/26/21; m. 46. B.S, Purdue, 42, Ph.D, 48. Eli Lilly & Co, 48-.

HUDDLE, J(ohn) W(arfield), *Geology.* Eugene, Ore, 8/14/07; m. 34, c. 2. B.S, Northwestern, 29; Ph.D, Indiana, 34. North Carolina, 34-, prof, 45-. Ind. Geol. Surv, 30-34. The New Albany Shale of Indiana.

HUDGIN, Donald Edward, *Chemistry.* Greenville, S. C, 8/11/17; m. 43, c. 2. B.S, Clemson Col, 38; M.S, Purdue, 40, Ph.D, 47. Procter & Gamble, res. chem, synthetic detergents, 47-.

HUDSON, J(ohn) W(alter), *Biology.* Evansville, Ind, 5/26/05; m. 29, c. 4. A.B, Evansville Col, 27; M.S, Chicago, 28. Loyola (Ill.), 28-, asst. prof, 34-.

HUFF, Clay G., *Parasitology.* Cory, Ind, 9/10/00; m. 27, c. 2. A.B, Southwestern Col, 24; Sc.D, Hopkins, 27. Chicago, 30-47, prof, 41-47; Naval Med. Res. Inst, ch. parasitol, 47-.

HUFF, Rex L(amar), *Medical Physics.* Bremen, Ind, 6/2/18; m. 41, c. 1. B.S, Purdue, 41; M.D, Indiana, 44. California, 47-.

HUFFER, C(harles) M(orse), *Astronomy.* Edinburg, Ind, 6/28/94; m. 28, c. 3. B.A, Albion Col, 16; M.A, Illinois, 17; Ph.D, Wisconsin, 26. Wisconsin, Washburn Observ, 22-, prof, 48-.

HUFFER, Ralph C(raig), *Astronomy.* Edinburg, Ind, 1/25/96; m. 20, c. 3. A.B, Albion Col, 18; M.A, Illinois, 20; Ph.D, Chicago, 34. Beloit Col, 23-, prof, 36-.

HUFFERD, Ralph W(illiam), *Chemistry.* Chanute, Kans, 8/5/92; m. 27. A.B, Washington (St. Louis), 15; M.A, Illinois, 17, Ph.D, 20. DePauw, 20-36, prof, 25-36.

HUFFMAN, Eugene H(arvey), *Chemistry.* Lawrenceburg, Ind, 12/5/05. A.B, Colorado, 27; M.S, Washington (Seattle), 29; Ph.D, Illinois, 37. Manhattan Proj, chem. and super, radiation lab, California, 43-.

HUFFMAN, H(arold) C(harles), *Chemistry.* Mt. Pleasant, Ia, 13; m. 36, c. 1. B.S, Iowa Wesleyan, 25; M.S, Purdue, 37, Ph.D, 40. Union Oil Co. Calif, 40-.

HUFFMAN, Walter Charles, *Chemical engineering.* Indianapolis, Ind, 4/10/14; m. 37, c. 3. B.S, Purdue, 35. Sun Oil Co. (Pa.), develop. eng, 42-.

HUFFORD, Mason E(dward), *Physics.* Frankfort, Ind, 9/27/82; m. 16, c. 1. B.S, Cent. Nor. Col, Danville, 04; A.B, Indiana, 11, A.M, 12, Ph.D, 16. Indiana, 12-, assoc. prof, 30-. Ind. Acad. Sci. (v. p, 48).

HUGHES, Darrell S(tephen), *Physics.* Linton, Ind, 7/3/04; m. 35, c. 2. A.B, Kentucky, 26, M.S, 28; Ph.D, Chicago, 31. Shell Oil Co. Tex, geophys, 36-45; Texas, prof, 45-.

HUGHES, H(oward) K(ibble), *Mathematics.* Laurens, Ia, 12/15/99. A.B, Iowa, 23, M.S, 24; Ph.D, Michigan, 30. Purdue, 30-, prof, 47-.

HUGHES, J(ames) M(onroe), *Education.* Tipton, Ind, 10/17/90. A.B, Indiana, 16; A.M, Columbia, 22; Ph.D, Minnesota, 24. Prin, Ind. high schs, 18-23; Northwestern, 24-, prof, 27-, dean, 41-.

HUITEMA, Roy, *Chemistry*. Milford, Ind, 4/19/04; m. 34, c. 2. A.B, Indiana, 28, A.M, 32, Ph.D, 34. Thermit Corp. (E. Chicago, Ind.), ch. chem, 36-43, supt, 43-47.

HULL, Clarence J(oseph), *Chemistry*. Ft. Madison, Ia, 7/14/19. B.S, Iowa, 41; M.A, Indiana, 42, Ph.D, 44. Detroit, instr, 46-.

HULL, Daniel, *Mathematics, Meteorology*. Toronto, Ont, Can, 70. B.A, Toronto, 89; M.S, Notre Dame, 22. Notre Dame, assoc. prof, 21-.

HULL, Ralph, *Mathematics*. Watford, Eng, 5/12/03; m. 34, c. 1. B.A, British Columbia, 29, M.A, 30; Ph.D, Chicago, 32. Purdue, head dept, 48-.

HULPIEU, H(arold) R(aymond), *Pharmacodynamics*. Dodge City, Kans, 2/21/01; m. 30. A.B, Southwestern Col, 23; M.A, Oklahoma, 24; Ph.D, Hopkins, 28. Indiana, sch. med. & dentistry, prof, pharmacol, 28-.

HUME, A(lbert) N(ash), *Agronomy*. Plymouth, Ind, 12/3/78; m. 03, c. 3. B.S.A, Purdue, 00, M.S, 02; Ph.D, Gottingen, 10. S. Dak. State Col, exp. sta, prof, 11-.

HUMMEL, A(rnim) D(ean), *Physics*. London Mills, Ill, 7/29/02; m. 27, c. 3. B.S, Knox Col, 23; M.S, Illinois, 24, Ph.D, 28. Ball State Teachers Col, assoc. prof, 47-.

HUMPHREY, Betty M(arie), *Parapsychology*. Indianapolis, Ind, 6/7/17. A.B, Earlham Col, 40; Ph.D, Duke, 46. Duke, res. assoc, 43-.

HUMPHREYS, Richard F(ranklin), *Nuclear physics*. Greenville, O, 5/16/11. A.B, DePauw, 33; M.A, Syracuse, 36; Ph.D, Yale, 39. Yale, 40-, assoc. prof, 48-.

HUMPHREYS, Robert E(dward), *Chemistry*. Abingdon, Va, 4/1/68; m. 91, c. 1. B.A, Emory and Henry Col, 89, A.M, 93; Ph.D, Hopkins, 00. Standard Oil Co. Ind, 00-32.

HUNDLEY, James M(anson), *Nutrition*. Summitville, Ind, 4/17/15; m. 40, c. 3. B.S, Indiana, 37, M.D, 40. Indiana, instr, 37-40; U. S. Pub. Health Serv, 40-.

HUNSICKER, H(arold) Y(undt), *Metallurgy*. Frankfort, Ind, 12/22/14; m. 39, c. 3. B.S, Purdue, 36; M.S, Case Inst. Tech, 39. Aluminum Co. Am, res. metal, 36-48, asst. ch. div, 48-.

HUNT, H(erschel), *Electrochemistry*. Princeton, Ind, 4/22/06; m. 29, c. 3. A.B, Oakland City Col, 26; A.M, Indiana, 27, Ph.D, 29. Purdue, 30-, prof, 40-.

HUNT, Thomas E(lwood), *Anatomy*. Blue Island, Ill, 12/15/02; m. 29, c. 2. A.B, Earlham Col, 25; Ph.D, Chicago, 29. Alabama, 29-, prof, 47-.

HUNTER, Albert S(inclair), *Soil chemistry*. Worthington, Ind, 10/21/08; m. 47. B.S, Utah State Agr. Col, 38; M.S, State Col. Wash, 40; Ph.D, Rutgers 43. U. S. Dept. Agr, 43-.

HUNTER, Hugh W(ylie), *Physics*. Greeley, Colo, 4/16/11; m. 37, c. 2. A.B, Indiana, 32, Ph.D, 37. Indiana, 37-42, res. assoc, 41-42.

HUNTER, J(ames) H., *Organic chemistry*. Apalachicola, Fla, 10/31/11. B.S, Florida, 33; Ph.D, Purdue, 39. Upjohn Co, 38-.

HUNZIKER, O(tto) F(rederick), *Dairying*. Zurich, Switzerland, 12/25/73. B.S.A, Cornell, 00, M.S, 01; hon. Sc.D, Purdue, 32. Purdue, exp. sta, ch. dept, 06-16; Blue Valley Creamery Co. (Ind.), dir. res. lab, 16-39.

HURD, Charles O(wen), *Chemical engineering*. Warsaw, Ind, 1/29/08; m. 35, c. 2. B.S, California, 34. Shell Develop. Co, 34-, eng, 38-.

HURLBUT, Floy, *Geography*. Kearney, Nebr, 4/29/88. A.B, Taylor (Ind.), 11; A.M, Nebraska, 28, Ph.D, 30. Foochow, China, 12-26; Ball State Teachers Col, 31-, prof, 49-.

HURST, Lewis A(lexander), *Biochemistry*. Muncie, Ind, 12/14/74; m. 11. B.S, Purdue, 99. U. S. Dept. Agr, Bur. Soils, 01-16, sci, 04-16, Bur. Plant Indust, biochem, 16-44.

HURTY, John N., *Medicine, Chemistry*. Lebanon, O, 2/21/52, died, 25; m. 77. M.D, Ind. Med. Col, 81. First dean Purdue sch. phar; Indianapolis Bd. Health, chem, 93-96; Ind. State Bd. Health, sec, 96-25; Indiana, sch. med, prof. Active in improving health in Indiana.

HUSTON, Henry A., *Agricultural chemistry*. Damariscotta, Me, 4/20/58. A.B, Bowdoin Col, 79, A.M, 82; A.C, Purdue, 82, hon. Sc.D, 31. Ind. high schs, 80-84; Purdue, prof. phys, 84-88, agr. chem, 88-03, dir. exp. sta, 02-03; state chem, Ind, 88-03.

HUSTON, Paul E(ger), *Psychiatry*. Delphos, O, 8/18/03; m. 32, c. 2. B.S, Purdue, 26, Ph.D, 37; M.S, Yale, 39. Iowa, 40-, assoc. prof, 48-.

HUSTON, Ralph E(rnest), *Mathematics*. Huntington, Ind, 9/16/02; m. 34, c. 4. S.B, Chicago, 23, Ph.D, 32; B.A, Oxford, 26 (Rhodes scholar, 23-26). Rensselaer Poly. Inst, 34-, prof, 48-.

HUTCHENS, John O(liver), *Physiology*. Noblesville, Ind, 11/8/15; m. 39, c. 3. A.B, Butler, 36; Ph.D, Hopkins, 39. Chicago, 41-, assoc. prof, chm. dept, 46-.

HUTCHINGS, Leslie Morton, *Veterinary pathology*. Portland, Me, 9/13/15; m. 39, c. 3. B.S, Maine, 37; D.V.M, Mich. State Col, 40, M.S, 42; Ph.D, Purdue, 47. Purdue, assoc. path, 42-, prof, 48-.

HUTCHINS, R(alph) P(earson), *Chemical engineering*. Portland, Ind, 2/25/09; m. 35, c. 2. B.S, Purdue, 31. Procter & Gamble, 31-46; French Oil Mill Machine Co, tech. dir, 46-.

HUTCHINSON, R(obert) O(rland), *Physics, Mathematics*. Near Bedford, Ind, 1/15/89; m. 21, c. 1. A.B, Indiana, 14; Ph.D, Chicago, 23. Tenn. Poly. Inst, prof, 31-.

HUTCHISON, Dwight A(ubrey), *Chemistry*. Madison, Ind, 3/5/18; m. 42, c. 1. B.A, Ohio State, 39, M.A, 41, Ph.D, 48. Argonne Natl. Lab, 48-.

HUTTON, J(oseph) Gladden, *Agronomy*. Monticello, Ind, 11/3/73, died, 39. B.S, Chicago, 08; M.S, Illinois, 10. S. Dak. Col, prof, 11-.

HYATT, Joseph L(ewis), *Zoology*. Benham, Ind, 6/19/88; m. 17, c. 2. B.Ed, Ill. State Nor. Sch, 21; M.S, Illinois, 23. Hanover Col, prof, 29-.

HYDE, Karl C(layton), *Botany*. Brazil, Ind, 8/27/91; m. 18, c. 4. A.B, Indiana, 15; A.M, Cornell, 21, Ph.D, 23. Ind. high schs, 15-17; Skidmore Col, prof, 23-.

HYDE, Roscoe R(aymond), *Zoology, Immunology*. Cory, Ind, 3/23/84, died, 43. A.B, Ind. State Nor. Sch, 08; A.B, A.M, Indiana, 09; Ph.D, Columbia, 15. Ind. State Nor. Sch, asst. prof. and prof, 09-19; Hopkins, 19-43, chg. dept, 28-43, prof, immunol, 32-43.

HYMAN, Hugh H(arvey), *Physics*. Galveston, Ind, 2/6/96; m. 36, c. 2. A.B, Ind. State Teachers Col, 24; M.A, California, 28, Ph.D, 29. Franklin Col, prof, 30-32; Henderson State Teachers Col, prof, 32-.

HYNDMAN, James B., *Bacteriology*. Jeffersonville, Ind, 6/25/14; m. 40, c. 1. A.B, Alabama, 35. U. S. Food & Drug Admin, 42-.

IDDINGS, Edward John, *Animal husbandry*. Peru, Ind, 3/22/79; m. 08, c. 2. B.S, Colo. Agr. Col, 07. Idaho, 10-46, prof, 11-16, dean agri, 15-46, dir. exp. sta, 18-46.

IFFLAND, Don C(harles), *Chemistry*. Blissfield, Mich, 11/26/21; m. 44. B.S, Adrian Col, 43; M.S, Purdue, 46, Ph.D, 47. West Virginia, asst. prof, 47-.

IMLE, E(rnest) P(aul), *Plant pathology*. Marshall, Ill, 10/15/10; m. 47. B.Sc, Purdue, 33, M.Sc, 36; Ph.D, Cornell, 42. U. S. Dept. Agr, Bur. Plant Indust, Soils & Agr. Eng, 42-.

INMAN, Charles E(dward), *Chemistry*. Bloomington, Ind, 8/27/15; m. 45. A.B, Indiana, 37, M.A, 38, Ph.D, 41. Pa. Salt Mfg. Co, 45-.

INMAN, O(ndess) L(amar), *Physiology*. Bloomfield, Ind, 11/11/90, died, 42. A.B, Indiana, 15; Ph.D, Harvard, 21. Antioch Col, prof. biol, 21-42.

IRELAND, Joseph C., *Plant physiology*. Burnettsville, Ind, 9/6/93; m. 21. B.S, Wabash Col, 17; M.C, Chicago, 22, Ph.D, 27. County agr. agt. (Decatur Co, Ind.), 20-22; Okla. A. & M. Col, prof, 28-.

IRELAND, Merritte Weber, *Medicine*. Columbia City, Ind, 5/31/67. M.D, Detroit Col. Med, 90; M.D, Jefferson Med. Col, 91; A.M, Michigan, 20. U. S. A, 91-31, major gen. and surgeon gen, 18-31.

IRONS, J(essee) V(ernal), *Bacteriology*. Sullivan Co, Ind, 5/17/03; m. 34, c. 2. B.S, Ind. State Teachers Col, 27; Sc.D, Hopkins, 33. State Dept. Health, Tex, lab, 33-, dir, 45-.

IRVIN, Howard H., *Chemistry*. Munich, Germany, 11/19/18; m. 43, c. 1. B.S, Rose Poly. Inst, 43. Marbon Corp, (Gary), asst. to dir. res, 43-.

IRWIN, Carl F(rancis), *Chemistry*. Auburn, Ill, 8/7/16; m. 40, c. 4. B.S, Notre Dame, 28, M.S, 39, Ph.D, 41. Dupont Co. (Ind.), 41-.

IRWIN, E(rnest) R(enan), *Chemistry*. Marietta, O, 11/2/00; m. 25, c. 3. A.B, Marietta Col, 22. Wright Field, ch. chem, 38-43; Standard Oil Co. Ind, 45-.

IRWIN, John B(arrows), *Astronomy*. Princeton, N. J, 7/7/09; m. 36, c. 4. B.S, California, 33, Ph.D, 46. Indiana, assoc. prof, 48-.

ISAACS, C(harles) A(pplewhite), *Mathematics*. Brownstown, Ind, 4/9/81, died, 37. A.B, Indiana, 05; A.M, Columbia, 08. Washington State Col, prof, 09-37, head dept, 18-37.

ISENBARGER, Jerome, *Plant physiology*. Kosciusko Co, Ind, 8/16/77; m. 02, c. 2. B.S, Indiana, 10. Ind. high schs, 02-10; Crane Jr. Col, prof, 22-33; Wright City Jr. Col, 34-42.

ISENBERGER, Robert M(urray), *Pharmacology*. Albany, Ind, 2/23/98; m. 28, c. 1. A.B, Kansas, 18, A.M, 23; M.D, Western Reserve, 25. Kansas, 19-, prof, 39-.

ISENHOUR, Lloyd L(eroy), *Chemistry*. New Augusta, Ind, 12/16/04; m. 29. A.B, DePauw, 26; M.S, Northwestern, 28, Ph.D, 30. Van Camp Packing Co, (Ind.), 29-31; Rohm & Haas Co, 32-.

ISKE, May Schaefer, *Zoology*. Lonaconing, Md, 10/12/01; m. 28. A.B, Butler, 24, M.A, 27. Butler, 24-, lect, 30-41, assoc. prof, 41-.

IVES, Ronald L(orenz), *Meteorology.* Cleveland, O, 10/12/09. B.A, Colorado, 35, M.S, 37; M.A, Indiana, 47, Ph.D, 50. Indiana, instr, 48-50.

IVETT, Reginald W(illiam), *Physical chemistry.* Stockton, N. Y, 10/27/15; m. 43. A.B, Allegheny Col, 36; M.S, Purdue, 39, Ph.D, 41. Hercules Powder Co, 41-, res. super, 43-.

JACKLIN, H(arold) M(adison), *Engineering.* Toronto, Ont, Can, 12/28/91; m. 15, c. 5. B.S, Mich. State Col, 13, M.E, 19. Purdue, assoc. prof, 27-, prof, 37-43.

JACKMAN, Harold W(esley), *Chemical engineering.* Martinsville, Ind, 10/19/01; m. 31. B.S.E, Michigan, 23, M.S.E, 24. Ill. Geol. Surv, 42-.

JACKSON, Alfred L., *Chemical engineering.* Partridge, Kans, 1/30/07. A.B, Oberlin Col, 27; M.S, Michigan, 34. Standard Oil Co. Ind, 34-.

JACKSON, C(icero) F(loyd), *Zoology.* Lafayette, Ind, 9/30/82; m. 05, 45, c. 1. A.B, DePauw, 05; M.S, Ohio State, 07. New Hampshire, prof, 10-.

JACKSON, D(ennis) E(merson), *Pharmacology.* Ridgeport, Ind, 9/3/78; m. 06, c. 2. A.B, Indiana, 05, A.M, 06, Ph.D, 08; M.D, Rush, 14. Indiana, 07-10, asst. prof, 08-10; Cincinnati, prof, 18-.

JACKSON, D(ugald) C(aleb), Jr, *Electrical engineering.* Madison, Wis, 8/3/95; m. 18, c. 4. A.B, Harvard, 17; S.B, Mass. Inst. Tech, 22, S.M, 22. Notre Dame, dean col. eng, 39-45.

JACKSON, H(erbert) S(pencer), *Botany* (starred). Augusta Center, N. Y, 8/29/83; m. 07, c. 2. A.B, Cornell, 05; Ph.D, Wisconsin, 29. Purdue, exp. sta, 15-29; Toronto, prof. mycol, 29-.

JACKSON, Theodore A(ndrew), *Psychology.* Muncie, Ind, 11/17/01; m. 36, c. 3. A.B, Indiana, 25, A.M, 26; Ph.D, Columbia, 31. Columbia, instr, 34-42; Indiana, asst. prof, 42-43.

JACKSON, T(homas) F(ranklin), *Geology.* Glen Allen, Mo, 2/20/82, died, 24. A.B, Indiana, 13, A.M, 14, Ph.D, 16. White River 1913 flood.

JACOBSON, H(enning), W(aldemar), *Organic chemistry.* Decorah, Ia, 10/1/15; m. 43. B.S, St. Olaf Col, 38; M.S, Purdue, 40, Ph.D, 42. Dupont Co, exp. sta, 42-.

JAEGER, Lucena, *Zoology.* Kokomo, Ind, 1/29/18. B.A, Missouri, 38, M.A, 39; Ph.D, Columbia, 46. Columbia, res. assoc, 45-.

JAMES, Charles M(orton), *Biology.* Jennings Co, Ind, 12/20/91; m. 18. B.S.A, Purdue, 14, M.S.A, 17. Purdue, instr, 19-, assoc. prof, 39-.

JAMES, Floyd L(amb), *Organic chemistry.* West Lafayette, Ind, 7/20/11; m. 39, c. 2. A.B, Indiana, 31, Ph.D, 37. Indiana, exten, instr, 36-41; Miami (O.), 44-, assoc. prof, 48-.

JAMES, Glenn, *Mathematics.* Wabash, Ind, 10/2/82; m. 17, c. 7. A.B, Indiana, 05, A.M, 11; Ph.D, Columbia, 17. Purdue, 08-17; California L. A, 17-, assoc. prof, 25-.

JAMES, Hubert Maxwell, *Physics.* Clarksburg, W. Va, 3/10/08; m. 32, c. 1. A.B, Randolph-Macon Col, 28; A.M, Harvard, 30, Ph.D, 34. Purdue, 36-, prof, 44-.

JAMES, Maurice T(heodore), *Entomology.* Elwood, Ind, 9/16/05; m. 29, c. 2. A.B, Colorado, 32, A.M, 34, Ph.D, 38. State Col. Wash, 47-, assoc. prof, 48-.

JAMES, Robert C(larke), *Mathematics.* Bloomington, Ind, 7/30/18; m. 45, c. 2. B.A, California L. A, 40; Ph.D, Calif. Inst. Tech, 46. California, instr, 47-.

JAMES, Vern, *Applied mathematics.* Lincolnville, Ind, 4/30/89; m. 18, c. 4. A.B, Indiana, 12; A.M, Columbia, 16; Ph.D, Stanford, 27. Menlo Jr. Col. (Calif.), 28-47; San Jose State Col, 47-, assoc. prof, 48-.

JAMES, W(illia)m S(tubbs), *Engineering.* Asbury Park, N. J, 9/3/92. B.S, Geo. Washington, 17. Studebaker Corp, ch. eng, 26-.

JAMIESON, W(alter) A(lbert), *Immunology, Bacteriology.* Utica, N. Y, 5/10/90; m. 12, c. 1. A.B, Trinity Col, (Conn.), 11. Eli Lilly & Co, 17-, dir. biol. div, 23-.

JAMISON, Robert M(cDonald), *Mechanical engineering.* Canadian, Tex, 1/13/08; m. 30, c. 2. B.S, Purdue, 30, M.E, 40. Wayne, 40-, assoc. prof, 45-.

JANNEY, John H(all), Jr, *Public Health.* Brookeville, Md, 7/24/93; m. 19, c. 2. B.S, Earlham Col, 13; M.D, Hopkins, 17, M.P.H, 28. Rockefeller Found, int. health div, field staff mem, 21-.

JANNEY, J(oseph) Elliott, *Psychology.* Brighton, Md, 11/9/03; m. 27, c. 2. A.B, Earlham Col, 25; M.A, Haverford Col, 26; Ph.D, Ohio State, 35. West. Col, 31-39; Western Reserve, asst. prof, 39-43.

JARVIS, C(harles) W(illard), *Physics.* Harrison Co, O, 86, died, 47. B.S, Valparaiso, 09; A.B, Ohio State, 15, A.M, 16, Ph.D, 26. Ohio State, 20-25; Ohio Wesleyan, assoc. prof, 25-29, prof, 30-47.

JEHLE, Ferdinand, *Mechanical engineering.* Highland, Ill, 2/27/88; m. 14, c. 1. B.S, Illinois, 10, M.E, 31. Hoffman Specialty Co. (Indianapolis), dir. eng, 42-.

JENKINS, Glen L(lewellyn), *Pharmaceutical chemistry.* Sparta, Wis, 3/25/98; m. 26, c. 4. Ph.G, Wisconsin, 21, B.S, 22, M.S, 23, Ph.D, 26. Purdue, dean sch. phar, 41-.

JENKINS, Hubert O(liver), *Vertebrate ecology.* Terre Haute, Ind, 1/24/85; m. 11, c. 2. A.B, Stanford, 07, Ph.D, 40. Calif. high schs, 21-31; Sacramento Jr. Col, 31-48.

JENKINS, Olaf Pitt, *Geology.* Greencastle, Ind, 2/9/89; m. 14, c. 3. A.B, Stanford, 13, M.A, 15, Ph.D, 30. State Col. Washington, assoc. prof. econ. geol, 20-25; State Div. Mines, Calif, ch. geol, 29-47, state mineral, 47-.

JENKINS, Oliver P(eebles), *Physiology, Ichthyology.* Bantam, O, 11/3/50, died, 35; m. 78, c. 3. A.B, Moores Hill Col, 69, A.M, 71; M.S, Indiana, 86, Ph.D, 90. Moores Hill prof, 76-82; Ind. State Nor. Sch, 83-86; DePauw, 86-91; Stanford, 91-16.

JENKINS, Russell L(ewis), *Organic chemistry.* Richmond, Ind, 1/4/97; m. 25, c. 3. B.Ch, Pittsburgh, 20; M.S, Illinois, 21, Ph.D, 23. Monsanto Chem. Co, 35-, dir. res, 40-.

JENKS, Frederick Perry, *Aeronautical engineering.* Minneapolis, Minn, 7/27/16; m. 45, c. 2. A.B, Harvard, 37; M.S, Notre Dame, 39, Ph.D, 40. Lockheed Aircraft Corp, 46-.

JENNINGS, F(rank) Lamont, *Nutrition.* Minneapolis, Minn, 4/25/21; m. 48. A.B, Indiana, 42, M.D, 47.

JENNINGS, Robert K(immel), *Bacteriology.* Cody, Wyo, 3/10/12; m. 40, c. 1. B.S, Purdue, 34, M.S, 36. Sharp & Dohme, immunol, 46-.

JENNY, Frank J(oseph), *Chemical engineering.* Utica, N. Y, 4/1/11. B.S, Notre Dame, 33; M.S, Mass. Inst. Tech, 34, Sc.D, 36. M. W. Kellogg Co. (N. Y.), 36-43.

JENS, Wayne H(enry), *Mechanical engineering.* Manitowoc, Wis, 12/20/21; m. 46, c. 1. B.S, Wisconsin, 39; M.S, Ph.D, Purdue, 48. Purdue, res. asst, 46-.

JENSEN, William J(acob), *Physics.* Morocco, Ind, 2/12/97; m. 24, c. 1. A.B, Carleton Col, 20; A.M, Illinois, 22. Mo. Sch. Mines, 24-, assoc. prof, 30-.

JERSEY, Vernon, *Biochemistry.* Buffalo, N. Y, 9/1/98; m, c. 1. A.B, Western Reserve, 20, M.A, 21, Ph.D, 35. Nutritional Res. Assoc. (Ind.), 36-.

JOHN, John Price Durbin, *Mathematics, Education.* Brookville, Ind, 11/25/43, died, 16; m. 69. A.M, McKendree Col, 67. Prof, math. 63-72; Brookville Col, prof, 72-76; Moores Hill Col, pres, 76-82; DePauw, prof, 82-95, pres, 89-95. Ind. Acad. Sci. (pres, 88).

JOHNSEN, Madeline (Mary), *Mathematics.* San Francisco, Calif, 5/13/21. A.B, M.A, Stanford, 43, Ph.D, 46. Purdue, instr, 46-.

JOHNSON, A(aron) D(onald), *Chemistry.* Bedford, Ind, 5/19/14; m. 36, c. 2. A.B, Indiana, 35, Ph.D, 39. Grasselli Chems, 44-.

JOHNSON, A(aron) G(uy), *Plant pathology.* Brookings Co, S. Dak, 9/1/80; m. 11, c. 3. Washington (St. Louis); B.S, S. Dak. State Col, 07; M.S, Purdue, 11; Ph.D, Wisconsin, 14. Purdue, exp. sta, asst. bot, 08-11; U. S. Dept. Agr, 14-49.

JOHNSON, B(ernard) L(ars), *Chemistry.* Elkhart, Ind, 3/13/05; m. 34, c. 1. B.S, Purdue, 28; M.S, Illinois, 31; Ph.D, North Carolina, 33. Firestone Tire & Rubber Co, group leader, 37-.

JOHNSON, Burt (Parker), *Plant physiology.* Ft. Wayne, Ind, 6/5/05; m. 32, c. 3. B.A, Park Col, 28; Ph.D, Wisconsin, 31. Natl. Cotton Council, cotton technol, 48-.

JOHNSON, C(harles) H(enry), *Organic chemistry.* Sterling, Va, 2/21/96. A.B, Wabash Col, 19, A.M, 23; Ph.D, Cornell, 25. Wabash Col, asst. prof, 21-24; Willamette, prof, 28-.

JOHNSON, Cha(rle)s W(illis), *Chemistry.* Concord, Ind, 9/23/73. Ph.C, Michigan, 96, B.S, 00, Ph.D, 03. Washington (Seattle), dean col. phar, 04-39.

JOHNSON, David F(ranklin), *Biology, Protozoology.* Parsons, Kans, 7/31/09; m. 33, c. 2. A.B, Wabash Col, 31; M.Sc, N. Y. U, 33, Ph.D, 37. Ind. State Teachers Col, 38-, assoc. prof, 45-.

JOHNSON, David L(ewis), *Biochemistry.* Worcester, Mass, 7/9/14. B.S, Massachusetts, 36. Purdue, exp. sta, 36-42; Bristol Labs, Inc, sr. res. chem, 45-.

JOHNSON, E(lijah) N(ewton), *Mathematics.* Willow Branch, Ind, 6/30/65, died, 34. A.B, Drake, 93, A.M, 95; M.S, Kansas, 04. Butler, prof, 04-26.

JOHNSON, Elton L(oyd), *Poultry nutrition.* Florence, Colo, 6/6/18; m. 42, c. 2. B.S.A, Okla. A. & M. Col, 40; M.S, Purdue, 42, Ph.D, 48.

JOHNSON, G(eorge) Dana, *Chemistry.* Brooklyn, N. Y, 3/10/18; m. 44, c. 1. A.B, Oberlin Col, 40, M.A, 41; Ph.D, Michigan, 46. Indiana, 46-, asst. prof, 50-.

JOHNSON, Ha(ro)l(d) G(ustav), *Organic chemistry.* Saginaw, Mich, 4/30/15. B.S, Beloit Col, 36, M.S, 38; Ph.D, Wisconsin, 41. Commercial Solvents Corp. (Terre Haute), 41-.

JOHNSON, Herbert H(alston), Jr, *Chemistry.* Indianapolis, Ind, 5/31/16; m. 40, c. 3. A.B, Wabash Col, 37; M.S, Pa. State Col, 38, Ph.D, 41. Dupont Co. (Indianapolis), ch. chem. eng, 42-45.

JOHNSON, Hobart McKinley, *Electrical engineering*. South Whitley, Ind, 10/31/97; m. 19, c. 2. B.S, State Col. Wash, 25; M.S, Iowa State Col, 28. Baker & Co. (Newark), res. eng, 43-.

JOHNSON, Kenneth, *Organic chemistry*. Putnam Co, Ind, 8/18/07; m. 39, c. 2. A.B, Ind. State Teachers Col, 31; Ph.D, Purdue, 37. Commercial Solvents Corp, 36-, dev. chem, 40-.

JOHNSON, L(innea) Margaret, *Biochemistry*. Minneapolis, Minn, 2/14/98. B.A, Macalester Col, 20; M.S, Purdue, 29; Ph.D, Wisconsin, 38. Purdue, 27-39, asst. prof, 37-39; Peabody Col, 40-.

JOHNSON, Marvin F. Linton, *Chemistry*. Chicago, Ill, 6/6/20; m. B.S, Loyola (Ill.), 40, M.S, 42. Sinclair Ref. Co. (Ind.), res. and develop. dept, 41-.

JOHNSON, Maxwell O(scar), *Chemistry*. Lafayette, Ind, 7/28/92; m. 15, c. 3. B.S, Purdue, 13, Ch.E, 28; M.S, Geo. Washington, 15. U. S. Dept. Agr, 14-19; Calif. Packing Corp, 22-.

JOHNSON, M(ychyle) W(ellington), *Cytology*. Mt. Horeb, Wis, 9/11/10; m. 35, c. 1. A.B, Ind. Cent. Col, 30; Ph.D, Indiana, 36. Duke, 37-, asst. prof, 42-.

JOHNSON, Robert A(nthony), *Ornithology*. Ellettsville, Ind, 11/2/98; m. 29, c. 2. B.S.A, Purdue, 24; M.S, Syracuse, 26; Ph.D, Cornell, 35. N. Y. State Teachers Col, Oneonta, prof, 29-.

JOHNSON, Vivian A(nnabelle), *Theoretical physics*. Portland, Ore, 7/1/12. B.A, Reed Col, 32; M.S, Purdue, 34, Ph.D, 37. Purdue, 32-, assoc. prof, 47-.

JOHNSON, Wendell L(eroy), *Biology*. Thedford, Nebr, 3/20/17; m. 41. B.S, Kans. State Teachers Col, 38; Ph.D, Indiana, 43. Ind. fishes field studies, 39-42; U. S. Fish & Wildlife Serv, Mo. River basin studies, 46-.

JOHNSON, Willis H(ugh), *Zoology*. Parkersburg, Ind, 12/21/02; m. 29, c. 2. A.B, Wabash Col, 25; M.S, Chicago, 29, Ph.D, 32. Wabash Col, 25-, prof, 46-.

JOHNSTON, Frederick L(ewis), *Organic chemistry*. Indianapolis, Ind, 8/10/12; m. 36, c. 4. B.A, Col. Wooster, 34; M.A, Syracuse, 35; Ph.D, Ohio State, 37. Dupont Co, 37-.

JOHNSTON, Gene W(oods), *Pharmacy*. Indianapolis, Ind, 4/20/12. B.S, West. Reserve, 36; M.S, Purdue, 39, Ph.D, 42. William R. Warner & Co, sr. chem, 46-.

JOHNSTON, W(illiam) D(rumm), Jr, *Geology*. Garrett, Ind, 11/3/99; m. 31, c. 4. S.B, Chicago, 21; Ph.D, Geo. Washington, 32. U. S. Geol. Surv, 28-, ch. for. sect, 46-.

JOHONNOTT, Edwin S(heldon), *Physics* (starred). Richmond, Ill, 11/9/68, died, 25; m. 00. B.S, Rose Poly. Inst, 93, M.S, 97; Ph.D, Chicago, 98. Rose, 99-25, prof, 09-25.

JONAH, Harold F(rancis) S(ecord), *Mathematics*. Sackville, N. B, Can, 10/20/04. B.Sc, Mt. Allison, 27; M.S, Brown, 29; Ph.D, Purdue, 41. Purdue, 30-, asst. prof, 41-.

JONES, A(rthur) T(aber), *Physics*. Vassalboro, Me, 9/9/76; m. 04, c. 1. B.S, Chicago, 99; Ph.D, Clark, 13. Purdue, 03-11, asst. prof, 06-11; Smith Col, 14-46, prof, 28-46.

JONES, David T(racy), *Comparative histology, Entomology*. Near Mt. Auburn, Ia, 1/9/00. A.B, Iowa, 23, M.S, 25; Ph.D, Indiana, 33. Huntington Col, prof, 45-46; Miami (O.), asst. prof. physiol, 46-.

JONES, Dean G(raeme), *Animal breeding*. Pine Village, Ind, 8/30/17; m, c. 2. B.S.A, Purdue, 39; M.S, Cornell, 41, Ph.D, 46. S. Dak. State Col, asst. prof. poultry husbandry, 46-.

JONES, Elmer E(llsworth), *Psychology*. Pennville, Ind, 5/31/66. A.B, Monmouth Col, 94; A.M, Colorado, 01; Ph.D, Columbia, 08. Indiana, prof, 08-14; Northwestern, 14-31, dir. sch. educ, 20-24, prof. educ, 24-31.

JONES, J. Shirley, *Chemistry*. Garret, Ind, 2/14/76; m. 06, c. 4. B.S, California, 03; M.S, Cornell, 14. Oregon State Col, prof, 19-47.

JONES, James Homer, *Chemistry*. Forney, Tex, 7/6/14; m. 38, c. 2. B.S, N. Texas State Teachers Col, 37, M.S, 38; Ph.D, Texas, 41. Indiana, 41-47, asst. prof, 44-47.

JONES, L(eo) Meyer, *Veterinary physiology*. Hartford City, Ind, 3/2/13; m. 35, c. 3. A.B, DePauw, 35; M.S, Iowa State Col, 39, D.V.M, 39; Ph.D, Minnesota, 45. Iowa State Col, 44-, prof, 45-.

JONES, Lonzo, *Psychology*. Davis City, Ia, 11/22/95; m. 14, c. 3. A.B, Iowa, 21, M.A, 24, Ph.D, 29. Ind. State Teachers Col, prof, 46-.

JONES, Loren Thomas, *Analytical chemistry*. Carroll, Ia, 5/3/05; m. 35. B.A, Iowa, 31; M.S, Michigan, 33, Ph.D, 34. Butler, prof, 46-47; Purdue, assoc. prof, 47-.

JONES, Norman R. D., *Biology*. Brookville, Ind, 7/31/99; m. 25, c. 2. B.S, Eureka Col, 22; M.S, Illinois, 28. Bd. Ed, Mo, 30-.

JONES, Ralph N., *Chemistry*. Anderson, Ind, 10/9/05; m. 48, c. 1. A.B, Wabash Col, 27; M.S, Purdue, 29; Ph.D, Northwestern, 32. Gen. Aniline & Film Co, prod. chem, 35-.

JONES, Reuben G(ardner), *Organic chemistry*. Cedar City, Ut; m. 40, c. 2. B.A, Utah, 37, M.A, 38; Ph.D, Iowa State Col, 41. Eli Lilly & Co, 43-, head special org. res. dept, 46-.

JONES, Russell Lowell, *Anatomy, Neurology*. Holiday, Mo, 3/8/08; m. 35, c. 1. A.B, Westminster Col. (Mo.), 30; M.S, St. Louis, 32; Ph.D, Minnesota, 35; M.D, Indiana, 49. Indiana, instr. to assoc. prof, 35-45.

JONES, Walter, *Physiological chemistry* (starred). Baltimore, Md, 4/28/65, died, 35. A.B, Hopkins, 88, Ph.D, 91. Purdue, prof, 92-95; Hopkins, 95-35, prof, 08-35.

JONES, W(illiam) J(ames), *Chemistry*. Watseka, Ill, 12/9/70, died, 17; m. 94. B.S, Purdue, 91, M.S, 92, A.C, 99. Asst. state chem, Ind, 92-01, deputy, 02-07, ch, 07-17; Purdue, prof, 07-17.

JORDAN, Charles B(ernard), *Pharmacy, Pharmaceutical chemistry*. Morrice, Mich, 11/5/78, died, 41. B.S, Michigan, 10, M.S, 12. Purdue, 10-41, dean sch. phar, 23-41.

JORDAN, David S(tarr), *Zoology* (starred). Gainesville, N. Y, 1/19/51, died, 31; m. 75, 87, c. 6. M.S, Cornell, 72, M.D, Ind. Med. Col, 75; Ph.D, Butler, 78; LL.D, Hopkins, 02, Illinois, 03, Indiana, 09. Butler, prof. biol, 75-79; Indiana, prof, 79-85, pres, 85-91; Stanford, pres, 91-13, chancellor, 13-16, chancellor emer, 16-31. World Peace Cong. (pres, 15); Am. Assn. Adv. Sci. (pres, 09); Ind. Acad. Sci. (founder, first pres, 86); Natl. Educ. Assn. (pres, 14); Calif. Acad. Sci. (pres, 96-98, 01-03, 08). Author of 50 books. An exceptionally stimulating man. Zoology; genetics; geographical distribution; fishes.

JORDAN, E(lijah), *Philosophy*. Elberfeld, Ind, 3/28/75. A.B, Indiana, 07; A.M, Cornell, 08; Ph.D, Chicago, 11. Butler, prof, 13-.

JORDAN, Garret L(owell), *Agricultural economics*. South Whitley, Ind, 11/21/96; m. 23, c. 1. B.S, Purdue, 22; M.A, Illinois, 29, Ph.D, 33. Illinois, 38-, prof, 41-.

JORDAN, Harry E., *Chemistry*. Coulterville, Ill, 11/15/82. B.S, Franklin Col, 03. Indianapolis Water Co, 04-36; Water Works Assn, Ind. sec. and ed, *Jour*, 36-.

JORNLIN, Francis M(alloy), *Soils*. Brookings, S. Dak, 11/4/17; m. 49. B.Sc, S. Dak. State Col, 39. Dupont Co. (Ind.), 42-45.

JOSEPH, Samuel I(srael), *Medicine*. N. Y. C, 5/27/18; m. 46, c. 1. A.B, DePauw, 39; M.S, N. Y. U, 41, Ph.D, 43; M.D, Wayne, 47. Bellevue Hosp, 48-.

JOSEPH, W(alter) E(dward), *Animal husbandry*. Lovett, Ind, 12/22/81. B.S, Purdue, 07. Resettlement Admin, 34-35; Fed. Security Agy, super, 37-.

JOSEY, Charles C(onant), *Psychology*. Scotland Neck, N. C, 1/1/93; m. 23, c. 2. B.A, Wake Forest Col, 13; M.A, Columbia, 18, Ph.D, 21. Butler, head dept, 39-.

JOYNER, Mary C(ross) (Mrs. Frederick H. Seares), *Astronomy*. Bedford, Ind, 8/3/89. A.B, Smith Col, 12. Carnegie Institution, Mt. Wilson Observ, computer, 15-46.

JUDAY, Chancey, *Limnology* (starred). Near Ligonier, Ind, 5/5/71, died, 44. A.B, Indiana, 96, A.M, 97. Ind. high schs, 98-00; Wis. Geol. & Nat. Hist. Surv, biol, 05-31; Wisconsin, prof, limnol, 31-41.

JUDSON, J(ames) Edward, *Biology*. Bristol, Ind, 6/15/00; m. 44, c. 2. B.S, Illinois, 22; M.S, Wisconsin, 24, Ph.D, 27. Franklin Col, prof, 49-.

JULIAN, Percy L(avon), *Organic chemistry*. Montgomery, Ala, 4/11/99; m. 35, c. 2. A.B, DePauw, 20, hon. D.Sc, 47; A.M, Harvard, 23; Ph.D, Vienna, 31. DePauw, 32-36; Glidden Co, dir. res, 36-45. (A Negro).

JULIEN, A(rlie) P(aul), *Chemistry*. Delphi, Ind, 4/21/98; m. 24, c. 2. A.B, DePauw, 20; A.M, Wisconsin, 22, Ph.D, 24. Allied Chem. & Dye Corp, Solvay Process Div, asst. ch. res, 45-.

JUMP, John Austin, *Plant pathology*. Easton, Md, 12/28/13. A.B, Swathmore Col, 34; Ph.D, Pennsylvania, 38. Notre Dame, asst. prof.

JUST, Theo(dor) K(arl), *Botany*. Gross-Gerungs, Austria, 10/27/04, nat, 38; m. 38, c. 3. Ph.D, Vienna, 28. Notre Dame, 29-46, prof, 41-46; Museum Nat. Hist. (Chicago), 46-, ch. curator bot, 47-. Ind. Acad. Sci. (pres, 43).

JUSTICE, J(ames) David, *Physical chemistry*. Cass Co, Ind, 8/2/19; m. 48. A.B, Harvard, 42; M.S, Poly. Inst. Brooklyn, 46; Ph.D, Lehigh, 48. Carbide & Carbon Chems. Corp, sr. chem, 48-.

JUSTIN, Miner M(onroe), *Agriculture, Statistics*. Phillips Co, Kans, 6/15/86; m. 43, c. 3. B.S.A, Kans. State Col, 07, M.S.A, 17. Purdue, exp. sta, ch. agr. statist, 25-.

KACZMAREK, Regidius M(arion), *Physiology*. Chicago, Ill, 11/21/88; m. 10, c. 4. A.B, St. Stanislaus Col, 06; Ph.C, Notre Dame, 12, M.S, 13, Ph.D, 15. Notre Dame, 15-45, prof, 27-45.

KADESCH, Richard G(ilmore), *Organic chemistry.* Annapolis, Md, 3/1/18; m. 43, c. 1. B.A, Iowa State Teachers Col, 38; Ph.D, Chicago, 41. Reynolds Metals Co. (Gary), dir. res, plastics div, 45-49.

KAGAN, Fred, *Organic chemistry.* Chicago, Ill, 12/24/20; m. 45, c. 1. B.S, Illinois, 42; Ph.D, Mass. Inst. Tech, 49. Standard Oil Co. Ind.

KAHLER, E(rnest) Jack, *Synthetic Resins, Plastics.* Sioux Falls, S. Dak, 5/23/19; m. 42, c. 2. B.S, Antioch Col, 41; Ph.D, Purdue, 45. Battelle Mem. Inst, res. eng, 47-.

KAHN, Reuben L(eon), *Serology, Immunology.* Kovno, Lithuania, 7/26/87, nat. 05; m. 17, c. 2. B.S, Valparaiso, 09; M.S, Yale, 13; D.Sc, N. Y. U, 16. Michigan, ch, Univ. Hosp. serol. lab, 28-, assoc. prof, 48-.

KALBFELL, David Conrad, *Nuclear physics.* Indianapolis, Ind, 8/20/14; m. 39, c. 3. A.B, California L. A, 34; M.A, California, 36, Ph.D, 39. Kalbfell Labs, Inc, pres, 46-.

KAMMERER, Robert C(rane), *Psychology.* Pittsfield, Ill, 7/21/10. A.B, Illinois, 33, M.A, 36; Ph.D, Indiana, 39. Dept. Pub. Welfare, Ind, 40-42.

KANNING, Eugene W(illiam), *Chemistry.* Ft. Wayne, Ind, 3/27/07. A.B, Indiana, 28, A.M, 29, Ph.D, 31. Indiana, 31-42, assoc. prof, 40-42; Arco Co. (Cleveland), dir. res, 45-48.

KANTER, Jerome Julius, *Metallurgy.* Terre Haute, Ind, 11/12/02; m. 39, c. 2. B.S, Chicago, 35. Crane Co, 20-, super. eng, res, 47-.

KANTOR, J(acob) R(obert), *Psychology.* Harrisburg, Pa, 8/8/88. Ph.B, Chicago, 14, Ph.D, 17. Indiana, 20-, prof, 23-.

KARCHER, J(ohn) C(larence), *Geophysics.* Dale, Ind, 4/15/94; m. 20, c. 2. B.S, Oklahoma, 16; Ph.D, Pennsylvania, 20. Geophys. Res. Corp, v. p, 25-30; Geophys. Serv, pres, 30-39; Coronado Corp, 39-41.

KARLING, John S(idney), *Botany,* (starred). Austin, Tex, 8/2/98; m. 40, c. 1. B.A, Texas, 18, M.A, 20; Ph.D, Columbia, 25. Columbia, 25-48, assoc. prof, 35-48; Purdue, head dept, 48-.

KARNATZ, F(rank) A(lbert), *Organic chemistry.* Chicago, Ill, 1/29/08; m. B.S, Illinois, 30; M.S, Pa. State Col, 31, Ph.D, 37. Reilly Tar & Chem. Corp. (Indianapolis), 36-.

KARSLAKE, James Spier, *Psychology.* Iowa City, Ia, 5/8/05; m. 38, c. 1. A.B, Michigan, 26; M.A, Harvard, 37; Ph.D, Purdue, 40. Mich. State Col, assoc. prof, 48-.

KARSLAKE, William J(ay), *Chemistry.* Le Roy, N. Y, 4/5/69. B.S, Lafayette Col, 91, M.S, 94; Ph.D, Hopkins, 95. Butler, prof, 97-04; Iowa, assoc. prof, 04-18; Allied Chem. & Dye Corp, Natl. Aniline Div, 18-39.

KASCH, John Edward, *Chemical engineering.* Bloomington, Ind, 9/3/16; m. 40, c. 2. B.S, Texas, 38, M.S, 39, Ph.D, 43. Pan Am. Ref. Corp, 46-, asst. dir. res, 48-.

KASLOW, Christian E(dward), *Chemistry.* Mora, Minn, 3/20/03; m. 26, c. 2. B.S, Hamlin, 24; M.S, Iowa, 29; Ph.D, Minnesota, 43. Indiana, 41-, assoc. prof, 49-.

KASPER, Charles, *Chemistry, Physics.* Chicago, Ill, 3/19/05. A.B, Indiana, 26; Ph.D, California, 30. U. S. Bur. Standards, 30-, chem, 43-.

KAUFFMAN, F(loyd) Leo, *Chemistry.* Mt. Pleasant, Ia, 11/18/15; m. 38. A.B, Iowa Wesleyan Col, 36; A.M, Ph.D, Indiana, 39. Swift & Co, 42-.

KAUFFMAN, Harry Hartman, *Poultry husbandry.* Dauberville, Pa, 9/12/99; m. 30, c. 1. B.S.A, Purdue, 22, M.S.A, 30. Purdue, instr, 22-24; Pa. State Col, 26-, prof, 42-.

KAUFMANN, Fred H., *Chemistry.* Sheboygan, Wis, 5/26/04; m. 29, c. 2. B.S, Wisconsin, 25, Ph.D, 33; M.S, Mich. State Col, 26. Valparaiso, 27-42, asst. prof. pharmacog, 33-40, assoc. prof, 41-42.

KAUFMAN, K(arl) L(incoln), *Pharmacy, Pharmaceutical chemistry.* Attica, O, 8/18/11; m. 36, c. 3. B.Sc, Ohio State, 33; Ph.D, Purdue, 36. Butler, exec. off, 49-.

KAVANAUGH, E(dward) S(hea), *Aeronautical engineering.* Alva, Okla, 3/22/14. B.S, Notre Dame, 38. Notre Dame, 42-, asst. prof, 44-.

KAY, Webster Bice, *Chemistry.* Hammond, Ind, 12/8/00; m. 39, c. 2. B.Ch.E, Ohio State, 22, Ph.D, 26. Standard Oil Co. Ind, 26-47; Ohio State, prof, 47-.

KAYE, Albert L(ouis), *Electrochemical engineering.* N. Y. C, 3/16/09; m. 34, c. 3. S.B, Mass. Inst. Tech, 31, M.S, 32, Sc.D, 34. Carnegie Ill. Steel Corp, metal, 37-41; Beckman Supply Co, mgr. alloy bur, v. p, 45-.

KEELER, John R(obert), *Chemical engineering.* Hammond, Ind, 6/23/17; m. 41, c. 1. B.S, Indiana, 39. Battelle Mem. Inst, res. eng, 41-.

KEIPPER, Charles Homer, *Bacteriology.* Van Wert, O, 4/15/97; m. 18. B.S.A, Purdue, 26, M.S, 28; Ph.D, Wisconsin, 31. Red Star Yeast Co, 31-, dir. prod. control, 44-.

KEKO, Wilbur L(ouis), *Chemistry*. Chicago, Ill, 7/25/16; m. B.S, Northwestern, 38. Commercial Solvents Corp. (Terre Haute), 38-44; supt. and head microbiol. pilot plant, 44-.

KELLER, M(arion) Wiles, *Mathematics*. Dayton, O, 6/21/05; m. 27, c. 1. A.B, Ohio Wesleyan, 26; M.A, Indiana, 29, Ph.D, 32. Purdue, 36-, assoc. prof, 47-.

KELLER, R(aymond) N(evoy), *Inorganic chemistry*. Wolcott, Ind, 4/21/09; m. 36, c. 2. A.B, A.M, Indiana, 37; Ph.D, Illinois, 40. Michigan, 42-, asst. prof, 45-.

KELLEY, Barbara M(ildred), *Biochemistry*. What Cheer, Ia, 4/30/23. A.B, Cornell Col, 44; M.A, Indiana, 47, Ph.D, 48. Arkansas, sch. med, res. assoc, 48-.

KELLEY, John L(e Roy), *Mathematics*. Kansas City, Kans, 12/6/16; m. 38, c. 3. A.B, California L. A, 36, M.A, 37; Ph.D, Virginia, 40. Notre Dame, asst. prof, 40-42; Chicago, asst. prof, 45-47; California, assoc. prof, 47-.

KELLOGG, Winthrop Niles, *Psychology*. Mt. Vernon, N. Y, 4/13/98; m, c. 2. A.B, Indiana, 22; M.A, Columbia, 27, Ph.D, 29. Indiana, 29-, prof, 37-.

KELLY, E(verett) Lowell, *Psychology*. Kokomo, Ind, 11/15/05; m. 38, c. 3. B.S, Purdue, 26; Ph.D, Stanford, 30. Purdue, assoc. prof, 39-42; Michigan, prof, 46-.

KELLY, Joe W(allace), *Civil engineering*. New Albany, Ind, 3/26/95; m. 30, c. 1. B.S, Purdue, 21. California, 32-, assoc. prof, 39-.

KELLY, Karl David, *Mathematics*. Georgetown, Ind, 12/6/88; m. 23. A.B, Transylvania Col, 13, A.M, 14; M.S, Chicago, 24. Fenn Col, prof, 37-.

KEMLER, E(mory) N(eudeck), *Mechanical engineering*. Basehor, Kans, 7/21/06; m. 30, c. 2. B.S, Kansas, 27, M.E, 32; M.S, Pittsburgh, 31, Ph.D, 34. Dodge Mfg. Corp. (Ind.), 27-29; Purdue, assoc. prof. to prof, 40-45.

KEMMERER, Kenneth Stanley, *Biochemistry*. Beloit, Wis, 11/13/07; m. 35, c. 3. B.S, Beloit Col, 30, M.S, 32; Ph.D, Illinois, 35. Mead Johnson & Co. (Evansville), 36-.

KEMP, C(ecil) R(aymond), *Medical biochemistry*. Webb, Ia, 1/3/06; m. 27, c. 2. B.S, Iowa State Col, 30; M.S, Iowa, 40, Ph.D, 47. Ball State Teachers Col. (Ind.), instr, 31-38; Flint, Eaton & Co, res. chem, 44-.

KEMPER, John Willard, *Dentistry*. Richmond, Ind, 9/14/91; m. 17. D.D.S, Michigan, 17, M.D, 27. Michigan, 28-, prof, 35-.

KEMPF, Alice H(ayes), *Bacteriology*. South Bend, Ind, 2/12/15. B.S, Michigan, 36, M.S, 38, Ph.D, 40. Michigan, res. assoc, hygienic lab, 42-.

KEMPF, Edward J(ohn), *Psychopathology*. Jasper, Ind, 7/26/85; m. 14. A.B, Indiana, 07; M.D, Western Reserve, 10. Hosp. Mental Diseases (Wash, D. C.), 14-20; practising (N. Y.), 20-.

KEMPF, Gerald F(idelis), *Clinical medicine*. Jasper, Ind, 12/24/91; m. 31, c. 1. A.B, Indiana, 16, M.D, 28. Indiana, 20-29, asst. prof, 27-29; Lilly Labs, res. physician, 29-46; dir. pub. health, Indianapolis, 46-.

KEMPTON, F(orrest) E(llwood), *Plant pathology*. Centerville, Ind, 10/5/83; m. 30. B.S, Earlham Col, 06; M.S, Wisconsin, 13; Ph.D, Illinois, 18. Ind. pub. schs, 05-12; U. S. Dept. Agr, 18-27.

KENDALL, A(nson) R(ay), *Chemistry*. Kokomo, Ind, 5/10/06. A.B, DePauw, 30; Ph.D, Iowa State Col, 34. Dakota Wesleyan, prof, 35-.

KENDRICK, James B(lair), *Plant pathology*. Clover, S. C, 8/13/93. B.S, Clemson Col, 16; M.S, Iowa State Col, 19, Ph.D, 25. Purdue, exp. sta, 19-27; California, assoc. plant path, 27-, assoc. prof, 38-43, prof, 43-.

KENDRICK, J(ames) B(lair), *Plant pathology*. Lafayette, Ind, 10/21/20; m. 42. B.A, California, 42; Ph.D, Wisconsin, 47. California Citrus Exp. sta, 47-.

KENNEDY, Clarence H(amilton), *Zoology* (starred), *Entomology*. Rockport, Ind, 6/25/79; m. 27, c. 2. A.B, Indiana, 02, M.A, 03; M.A, Stanford, 15; Ph.D, Cornell, 19. Ohio State, 19-, prof, 33-.

KENNEDY, Hunter F(elix), *Medicine*. Indianapolis, Ind, 5/21/10. M.D, Indiana, 37. Geo. Washington, clin. instr, 40-; Fed. Security Agy, sr. med. off, 40-.

KENSLER, George Tilghman, *Bacteriology*. Bicknell, Ind, 1/25/02; m, c. 1. B.S, Purdue, 28, Ph.D, 40. Lederle Labs, Inc. (Indianapolis), 29-36; Pitman Moore Co, 37-39; Kraft Foods Co, ch. bact, 40-.

KENT, Clarence H(ammond), *Mechanical engineering*. Churubusco, Ind, 10/16/92; m. 19. B.S, Purdue, 15, M.E, 27; Ph.D, Michigan, 31. Pa. State Col, prof, 31-37; Col. City N. Y, assoc. prof, 37-48, prof, 48-.

KENT, Clifford E(ugene), *Chemical engineering*. Augusta, Kans, 10/11/20; m. 42, c. 1. B.S.Ch.E, Purdue, 42. Gen. Elec, sr. chem. eng, 46-.

KENT, Earle L(ewis), *Electrical engineering*. Adrian, Tex, 5/22/10; m. 35, c. 2. B.S, Kans. State Col, 35, M.S, 36. C. G. Conn (Elkhart, Ind.), 40-, dir. res, 41-47, mgr. electronics div, 47-.

KENT, Grace H(elen), *Psychology*. Michigan City, Ind, 75. A.B, Iowa, 02, A.M, 04; Ph.D, Geo. Washington, 11. Worcester State Hosp, 22-26; Danvers State Hosp. (Mass.), 28-46.

KENT, Norton A(dams), *Physics* (starred). N. Y. C, 7/28/73, died, 44. A.B, Yale, 95; Ph.D, Hopkins, 01. Wabash Col, prof, 03-06; Boston, 06-42, prof, 10-42.

KENT, Robert E(ugene), *Organic chemistry*. Franklin, Ind, 5/24/19; m. 40. A.B, Franklin Col, 40; Ph.D, Wisconsin, 44. Dupont Co, 44-49.

KENWORTHY, Ray W(illiam), *Physics*. Boone Grove, Ind, 11/29/98; m. 24, c. 2. B.A, Iowa, 24, M.S, 25; Ph.D, Washington (Seattle), 38. Washington, 29-, asst. prof, 39-.

KENYON, A(lfred) M(onroe), *Mathematics*. Medina, O, 12/10/69, died, 21; m. 97. A.B, Hiram Col, 94; A.M, Harvard, 98. Purdue, 98-21, prof, 03-21, head dept, 08-21.

KENYON, Reid L., *Metallurgy*. Indianapolis, Ind, 12/7/96; m. 22, c. 1. B.S.Ch.E, Purdue, 19, Ch.E, 27. Am. Rolling Mill Co, 20-48, assoc. dir. res. labs, 40-48.

KENYON, Westcott C(larke), *Chemical engineering*. West Lafayette, Ind, 2/26/12; m. 34, c. 2. B.S, Purdue, 34, M.S, 35. Prest-O-Lite Battery Co. (Indianapolis), anal. chem, 35-36; Hercules Powder Co, 36-.

KEPFER, Raymond J(ohn), *Chemistry*. Idaville, Ind, 3/29/02; m. 28, c. 2. A.B, DePauw, 26; A.M, Wisconsin, 28, Ph.D, 30. Grasselli Chem. Dept, 32-, tech. serv. rep, 42-.

KEPHART, Newell Carlyle, *Industrial psychology*. Parker, Kans, 1/24/11; m. 45. A.B, Denver, 32; M.A, 33; Ph.D, Iowa, 36. Purdue, asst. prof, 45-.

KERN, Frank Dunn, *Botany* (starred). Reinbeck, Ia, 6/29/83; m. 07, c. 2. B.S, Iowa, 04; M.S, Purdue, 07; Ph.D, Columbia, 11. Purdue, exp. sta, assoc. bot, 05-13; Pa. State Col, prof, 13-, dean grad sch, 22-.

KERN, Stanley F(elix), *Chemistry*. Renville Co, Minn, 11/20/13; m. 39, c. 4. B.S, St. Thomas Col, 37; Ph.D, Illinois, 41. Eli Lilly & Co, 46-.

KERR, Willard A(ugusta), *Psychology*. Brookport, Ill, 2/25/18; m. 39, c. 2. B.Ed, South. Ill. U, 39; M.S, Purdue, 40, Ph.D, 42. Ill. Inst. Tech, assoc. prof, 47-.

KERWIN, James F(rancis), *Organic chemistry*. Hancock, N. Y, 10/28/19. B.S, Notre Dame, 41, Ph.D, 44. Smith, Kline & French Labs, sr. chem, 46-.

KESNER, H(enry) J(ames), *Civil engineering*. Ont, Can, 10/30/83, died, 45. A.B, Colorado, 05, B.S, 07, C.E, 11. Purdue, 15-21, assoc. prof, 18-21; Nebraska, 23-45, prof, 27-45.

KESSEL, William George, *Organic chemistry*. Terre Haute, Ind, 2/25/11; m. 36, c. 2. A.B, Franklin Col, 32; M.A, Ind. State Teachers Col, 33; M.S, Purdue, 46. Teacher, Terre Haute schs, 37-46; Ind. State Teachers Col, asst. prof, 46-.

KETTENRING, Kenneth N(orman), *Chemical engineering*. Oak Park, Ill, 12/12/19; m. 42, c. 3. B.S, Purdue, 41, Ph.D, 48. Dupont Co, res. eng, 48-.

KIEFER, Paul J(ames), *Thermodynamics*. Camden, Ind, 11/26/86; m. 13, c. 1. A.B, Wittenberg Col, 08; B.S, Case Inst. Tech, 11, M.E, 30. U. S. Naval Acad, post-grad. sch, 20-, chm. dept, 25-.

KIESS, Carl Clarence, *Spectroscopy*. Ft. Wayne, Ind, 10/18/87; m. 19, c. 3. A.B, Indiana, 10; Ph.D, California, 13. U. S. Bur. Standards, 17-, phys, 24-.

KILLIAN, Donald B., *Chemistry*. Canton, O, 3/8/10. B.S, Notre Dame, 32, M.S, 34, Ph.D, 36. Dupont Co, 36-.

KIMBALL, Grace C(aroline), *Bacteriology*. Rochester, N. Y, 4/24/11. A.B, Rochester, 32; Ph.D, Cornell, 37. Evansville Col, assoc. prof. biol, 44-.

KIME, Edwin N(icholas), *Medicine*. Jeffersonville, Ind, 2/23/91; m. 16, c. 2. A.B, Indiana, 14, M.D, 16. Indiana, 17-, asst. prof. surg, 23-40, head dept. anat, 40-.

KINDERMAN, Edwin M(ax), *Physical chemistry*. Cincinnati, O, 8/21/16; m. 42, c. 2. A.B, Oberlin Col, 37; M.S, Notre Dame, 38, Ph.D, 41. Portland, asst. prof, 45-.

KINDLE, Edward M(artin), *Paleontology* (starred). Franklin, Ind, 3/10/69, died, 40; m. 01, c. 9. A.B, Indiana, 93, LL.D, 39; M.S, Cornell, 96; Ph.D, Yale, 99. Indiana, instr. geol, 94-95; asst. state geol, Ind, 98-01; U. S. Geol. Surv, paleont, 01-12; Can. Geol. Surv, ch. div. invert. paleont, 12-38. Devonian fossils and stratigraphy of Indiana; Niagara faunas of Indiana.

KING, Cecil V(ictor), *Chemistry*. Union City, Ind, 12/22/99; m. 28, 41, c. 1. A.B, Indiana, 19; A.M, Columbia, 22, Ph.D, 24. N. Y. U, 28-, asst. prof, 28-40, assoc. prof, 40-44, prof, 44-.

KING, Cyrus A(mbrose), *Botany*. Plum Tree, Ind, 6/19/67, died, 29. A.B, Indiana, 93; A.B, Harvard, 97, A.M, 98, Ph.D, 02. Indiana, instr, 00-02; N. Y. C. high schs, 02-29.

KING, Everett E(dgar), *Civil engineering.* Warren, Ind, 77; m. 03. B.S, Rose Poly. Inst, 01, M.S, 08, C.E, 09; A.B, Indiana, 10; M.C.E, Cornell, 11. Illinois, prof. ry. eng, 18-45.

KING, Florance B(eeson), *Food chemistry.* Richmond, Ind, 12/5/89. B.S, Illinois, 14; A.M, California, 26; Ph.D, Indiana, 29. Indiana, 17-29, asst. prof, 27-29; U. S. Dept. Agr, 31-40; Vermont, prof, 40-.

KING, F(ranklin) G(eorge), *Animal husbandry.* Sweet Springs, Mo, 12/18/84, died, 45. B.S, Missouri, 07. Purdue, exp. sta, 10-28, prof. and head dept, 28-45.

KING, Frederick E(llsworth), *Engineering.* Racine, Wis, 3/9/14; m. 37, c. 2. B.S, Michigan, 37. Linde Air Prods. Co. (Indianapolis), develop. eng, 37-.

KING, G(eorge) C(aryl), *Mechanical engineering.* Painesville, O, 5/23/78. B.S, Purdue, 01, M.E, 17. Purdue, prof, 12-43.

KING, Irving, *Psychology, Philosophy.* Richmond, Ind, 7/17/74. A.B, Earlham Col, 96; Ph.D, Chicago, 04. Bloomingdale Acad. (Ind.), 98-00; Iowa, prof, 09-.

KING, Jessie L., *Physiology.* Richmond, Ind, 10/19/81. B.S, Earlham Col, 04; Ph.D, Cornell, 11. Goucher Col, 11-47, prof, 19-47.

KING, John A(lbert), *Organic chemistry.* Columbus, Ind, 9/6/16; m. 41, c. 2. A.B, Indiana, 38; M.S, Minnesota, 40, Ph.D, 42. Warner Inst. Therapeut Res, dir. org. res, 46-.

KING, J(ohn) R(ichard), *Botany.* Williamsport, Ind, 5/28/10. A.B, Indiana, 31; M.S, Maryland, 32, Ph.D, 35. U. S. Dept. Agr, 35-.

KING, L. D. Percival, *Physics.* Williamstown, Mass, 12/29/06. B.S, Rochester, 30; Ph.D, Wisconsin, 37. Purdue, instr, 37-42, Los Alamos Sci. Lab, 43-.

KING, Philip B(urke), *Geology* (starred). Richmond, Ind, 9/24/03; m. 32, c. 1. B.A, Iowa, 24, M.S, 27; Ph.D, Yale, 29. U. S. Geol. Surv, 30-.

KING, Robert Augustin, *Chemical engineering.* Marion, Ind, 9/3/10; m. 35, c. 2. B.S, Oklahoma, 35. E. B. Badger & Sons (N. Y.), 44-.

KING, Willis A(lonzo), *Dairying.* Abbeville, S. C, 1/8/15; m, c. 2. B.S, Clemson Col, 36; M.S, Wisconsin, 38, Ph.D, 40. Purdue, assoc. prof, 45-.

KINGERY, H(ugh) M(cMillan), *Histology.* Emporia, Kan, 5/19/87; m. 29, c. 2. B.A, Wabash Col, 08, M.A, 09; Ph.D, Cornell, 17. Colorado, sch. med, 19-, prof, 47-.

KINGKADE, Mary Jane (Ward), *Biochemistry.* Salt Lake City, Ut, 5/28/22; m. 48. B.S, Iowa State Col, 43, Ph.D, 47. Eli Lilly Res. Labs, 47-.

KINGSBURY, F(ranklin) L(aflin), *Chemical engineering.* Indianapolis, Ind, 8/13/00; m. 33, c. 3. B.S, Illinois, 24. Natl. Lead Co, 25-, res. lab, 38-.

KINGSLEY, John Sterling, *Zoology* (starred). Cincinnatus, N. Y, 4/7/53, died, 29; m. 82. A.B, Williams Col, 75. Indiana, prof, 87-89; Tufts, 92-13; Illinois, 13-21.

KINNAMAN, A(ndrew) J(aneway), *Psychology, Pedagogy.* Logansport, Ind, 2/27/63. A.B, Indiana, 00, A.M, 01; Ph.D, Clark, 02. Cent. Nor. Col, 85-99, pres, 03-06; West. Ky. State Nor. Col, dean, 06-.

KINNEY, Jacob M(illison), *Mathematics.* Spencer, Ind, 12/21/77; m. 12, c. 1. A.B, Indiana, 04; A.M, Nebraska, 07; Ph.D, Chicago, 17. Ind. schs, 96-08; Chicago high schs, 12-27; Wilson Jr. Col, 34-43.

KINSEY, Alfred C(harles), *Zoology* (starred), *Entomology.* Hoboken, N. J, 6/23/94; m. 21, c. 3. B.S, Bowdoin Col, 16; Sc.D, Harvard, 20. Indiana, 20-, assoc. prof, 23-29, prof, 29-. In charge joint study human sex behavior, Rockefeller Found. and Natl. Res. Council, 38-.

KINSEY, W(endell) H., *Physics.* Claypool, Ind, 6/8/98; m. 25, c. 2. A.B, Indiana, 25, A.M, 28. Ind. high schs, 23-28; Connecticut, 29-, assoc. prof, 42-.

KINTNER, Edward, *Biology.* Near Ney, O, 7/1/79. A.B, Manchester Col, 12; A.M, Ohio State, 14. Manchester Col, 09-, prof, 12-. Ind. Acad. Sci. (v. p, 36). Spiders, fresh-water sponges.

KIOKEMEISTER, Fred L(udwig), *Mathematics.* Chicago, Ill, 5/5/13; m. 40, c. 1. B.A, Wisconsin, 35, M.A, 37, Ph.D, 40. Purdue, instr, 43-46; Holyoke Col, 46-, assoc. prof, 48-.

KIRCHER, Charles E(dmund), *Chemical engineering.* B.S, Calif. Inst. Tech, 31, M.S, 33; Ph.D, Iowa State Col, 40. Rose Poly. Inst, head dept, 47-.

KIRCHNER, W(illiam) H(erman), *Mathematics, Graphics.* Templeton, Mass, 10/24/68; m. 94, c. 2. B.S, Worcester Poly. Inst, 87. Rose, prof, 88-94; Minnesota, prof, 94-37.

KIRK, Charles T(ownsend), *Geology.* Francisco, Ind, 6/22/76. B.S, Oklahoma, 04, A.M, 05; Ph.D, Wisconsin, 11. Cons. geol, 18-.

KIRKBRIDE, C(halmer) G(atlin), *Chemical engineering.* Tyrone, Okla, 12/27/06; m. 39, c. 1. B.S.E, M.S.E, Michigan, 30. Standard Oil Co. Ind, chem. eng, 30-34. A. and M. Col. (Tex.), prof, 44-47.

KIRKHAM, W(illia)m J(ohn), *Mathematics.* Elizabeth, Ind, 8/3/01. A.B, Indiana, 27, A.M, 28, Ph.D, 35. Oregon State Col, 29-.

KIRKLIN, B(yrl) R(aymond), *Radiology.* Gaston, Ind, 9/22/88; m. 15, c. 2. B.S, M.D, Indiana, 14. Home Hosp. (Ind.), radiol, 15-25; Mayo Clinic, 26-30; Minnesota, Mayo Found, prof, 30-.

KIRKLIN, Wayne A., *Chemistry.* Blountsville, Ind, 10/1/02; m. 29, c. 2. A.B, Indiana, 26. Hercules Powder Co. Exp. Sta. (N. J.), 26-, mgr. anal. div, 31-.

KIRKMAN, Hadley, *Histology.* Richmond, Ind, 3/14/01; m. 42. A.B, Iowa, 25; S.M, Chicago, 29; Ph.D, Columbia, 37. Stanford, sch. med, 36-, prof, 49-.

KIRKPATRICK, Charles M(ilton), *Zoology.* Greensburg, Ind, 1/1/15; m. 39, c. 2. B.S, Purdue, 38; M.A, Wisconsin, 40, Ph.D, 43. Purdue, asst. prof. wildlife mgt, 41-. Physiology of farm game birds and mammals; Indiana mammalogy; food habits of bird predators.

KIRKWOOD, Daniel, *Astronomy.* Harford Co, Md, 9/27/14, died, 94. Indiana, prof. math, 56-86. Wrote several distinguished papers on meteors, comets, asteroids.

KISTLER, Gene H(aviland), *Surgery, Pathology.* Royal Centre, Ind, 5/9/04. A.B, Wabash Col, 26; M.S, Chicago, 28; M.D, Rush, 31. Baroness Erlanger Hosp, Surgeon, 36-.

KITSON, Harry Dexter, *Vocational psychology.* Mishawaka, Ind, 8/11/86; m. 22. A.B, Hiram Col, 09; M.A, Minnesota, 13; Ph.D, Chicago, 15. Indiana, prof, 19-25; Columbia Teachers Col, prof, 25-.

KITTRELL, F(rancis) W(ilson), *Chemistry.* Florence, S. C, 7/2/02; m. 35, c. 2. B.S, N. C. State Col, 23; M.S, Harvard, 33. Standard Oil Co. Ind, 24-29; Tenn. Valley Authority, ch. stream sanit. sect, 42-.

KLAER, Fred H(arlan), Jr, *Geology.* Philadelphia, Pa, 11/28/14; m. 40, c. 2. B.A, Amherst Col, 35; M.Sc, Northwestern, 37. U. S. Geol. Surv, 37-, dist. geol. (Indianapolis), 46-.

KLECKNER, Albert L(ouis), *Bacteriology.* Allentown, Pa, 10/23/09; m. 43, c. 2. B.S, Franklin and Marshall Col, 31; M.S, Pennsylvania, 32, Ph.D, 35. Pitman-Moore Co. (Indianapolis), res, 43-.

KLEIDERER, Ervin C(arleton), *Pharmaceutical chemistry.* Evansville, Ind, 11/1/07; m. 34, c. 2. B.S, Illinois, 28, M.S, 39, Ph.D, 33. Eli Lilly & Co, 33-, asst. exec. dir. res. and control, 45-.

KLEIN, Bertram, *Aeronautical engineering.* N. Y. C, 1/29/21. B.A, Brooklyn Col, 46; B.A.E, Poly. Inst. Brooklyn, 43, M.A.E, 45. Purdue, 47-, prof, 49-.

KLEIN, Elias, *Physics.* Wilno, Poland, 1/11/90; m. 24, c. 2. B.S, Valparaiso, 11, B.C.E, 12; Ph.D, Yale, 21. Valparaiso, 12-17; Naval Res. Lab, phys, 27-.

KLEIN, Erhard O(tto) P(aul), *Electrical engineering.* Dixon Co, Nebr, 3/18/16; m. 41, c. 1. B.S, Nebr. State Teachers Col, 41; B.S, Purdue, 47. Purdue, instr, 47-.

KLEIN, Gilbert E(nglander), *Metallurgy.* Indianapolis, Ind, 8/27/17; m. 45, c. 1. B.S, Case Sch. Appl. Sci, 39, M.S, 42; S.M, Mass. Inst. Tech, 47. Oak Ridge Lab, sr. physical metal, 49-.

KLEINHOLZ, M(ilton) P(aul), *Chemistry.* N. Y. C, 7/24/14; m. 39. B.S, Colby Col, 35. Sinclair Ref. Co. (Ind.), 39-48.

KLEINSMITH, A(lbert) W(illoughby), *Organic chemistry.* Clinton, Ia, 3/20/13. B.S, Iowa State Col, 35; Ph.D, Purdue, 41. Cent. Soya Co. (Decatur, Ind.), res, 40-.

KLEMM, Le Roy H(enry), *Chemistry.* Maple Park, Ill, 7/31/19; m. 45, c. 1. B.S, Illinois, 41; M.S, Michigan, 43, Ph.D, 45. Indiana, 47-, asst. prof, 49-.

KLEMME, Carl J(oseph), *Pharmacy.* Alexander, Ia, 4/25/98; m. 42, c. 1. Ph.C, Colorado, 23, B.S, 24, M.S, 25; Ph.D, Harvard, 32. Purdue, 25-41, prof, 38-41.

KLIER, E(ugene) P(aul), *Metallurgy.* Flora, Ill, 1/4/19; m. 44, c. 2. B.S, Notre Dame, 40, M.S, 42, Ph.D, 44. Pa. State Col, res. asst. prof, 44-.

KLINE, B(ernerd) E(verett), *Biochemistry.* La Porte, Ind, 10/16/07; m. 46, c. 1. B.S, Wisconsin, 32, M.S, 33. Wisconsin, res. chem, 39-.

KLINE, Daniel L(ouis), *Physiological chemistry.* Philadelphia, Pa, 12/25/17; m. 45, c. 3. B.S, Purdue, 42; Ph.D, Columbia, 46. Yale, 48-, asst. prof, 49-.

KLINE, James E(dward), *Astronomy.* South Bend, Ind, 2/9/98. A.B, Notre Dame, 22; Ph.D, California, 35. Notre Dame, 27-39, asst. prof, 34-39; St. Edward's Sem, 39-.

KLINE, Oral Lee, *Biochemistry.* Reynolds, Ind, 9/12/05; m. 29, c. 3. B.S, Wisconsin, 29, M.S, 31, Ph.D, 34. Fed. Security Agy, Food & Drug Admin, 36-, res. dir. nutrition div, 47-.

KLIPPLE, Graydon E., *Range management.* Brookville, Ind, 1/2/91; m. 19, c. 4. B.S, Purdue, 15; B.S, Colo. A. & M. Col, 26, M.S, 39. U. S. Forest Serv, Rocky Mt. Forest & Range Exp. Sta, 36-, statist. analyst, 39-46, range cons, 46-.

KLOETZEL, Milton C(arl), *Organic chemistry.* Detroit, Mich, 8/28/13; m. 38, c. 3. B.S, Michigan, 34, Ph.D, 37. DePauw, 41-45, assoc. prof, 44-45; South. California, 45-.

KLOPSCH, Ferdinand T(heodore), *Chemical engineering.* Michigan City, Ind, 11/3/12; m. 38. B.S, Purdue, 34. Atlantic Ref. Co. (Philadelphia), 34-, special eng, 48-.

KLUGE, Ralph W(endel), *Engineering.* Chicago, Ill, 10/8/05; m. 29, c. 2. B.S, Illinois, 28, M.S, 30. Purdue, assoc. prof. struct. eng, 48-.

KNAPP, David G(oodwin), *Geomagnetism.* Indianapolis, Ind, 7/20/07; m. 41, c. 3. B.S, Butler, 35. Indianapolis Power & Light Co, lab. tech, 28-36; U. S. Coast & Geod. Surv, math, 36-.

KNAPP, W(illard) A(lfred), *Engineering.* Platt Co, Ill, 1/29/85; m. 10, c. 1. B.S, Illinois, 07; C.E, Purdue, 11. Purdue, 08-, prof, 25-, asst. dean sch. eng, 35-43, assoc. dean, 43-.

KNIGHT, F(rederic) B(utterfield), *Psychology.* Springfield, Mass, 7/2/91, died, 48. A.B, Boston, 13; A.M, Harvard, 15; Ph.D, Columbia, 20. Iowa, prof, 19-37; Purdue, dir. appl. psych, 37-48.

KNIGHT, Odon S(tahlhut), *Chemical engineering.* Denver, Colo, 6/22/07; m. 36, c. 3. B.S, Colorado, 28, M.S, 32, Ph.D, 33, Ch.E, 35. Rose Poly. Inst, 39-44; Commercial Solvents Corp. (Terre Haute), super, 43-.

KNIPMEYER, C(larence) C(arl), *Engineering.* Higginsville, Mo, 8/1/83; m. 10, c. 2. B.S, Michigan, 07. Rose Poly. Inst, 09-, prof, 20-.

KNIPP, Cha(rle)s T(obias), *Physics* (starred). Napoleon, O, 8/13/69, died, 48. A.B, Indiana, 94, A.M, 96; Ph.D, Cornell, 00. Indiana, 96-03, asst. prof, 00-03; Illinois, 03-37, prof, 18-37. Ill. Acad. Sci. (pres, 21).

KNIPP, Julian K(nause), *Physics.* Urbana, Ill, 1/18/10; m. 43, c. 3. A.B, Illinois, 31; A.M, Harvard, 32, Ph.D, 35. Purdue, 36-46, asst. prof, 41-46.

KNOEFEL, Peter K(lerner), *Pharmacology.* New Albany, Ind, 8/4/06; m. 39. B.A, Wisconsin, 27, M.A, 28; M.D, Harvard, 31. Louisville, sch. med, 35-, prof, 39-.

KNOTT, Gladys Ethelyn, *Biology.* Colfax, Ind, 1/20/84, died, 47. M.S, Purdue, 11. Sponsored a Jr. Acad. Sci. Club (New Albany), 35-47.

KNOWLTON, Millard, *Medicine.* Colfax Co, Nebr, 2/18/75, died, 48. M.D, Indiana, 05; C.P.H, Harvard—M.I.T, 18. Ind. rural schs, 96-01; State Dept. Health, Conn, dir. bur. preventable diseases, 23-.

KNUDSEN, Oran M(ilton), *Physical chemistry.* Provo, Ut, 11/14/09; m. 36, c. 1. B.S, Wisconsin, 33, Ph.D, N. Y. U, 38. Rose Poly. Inst, 46-, assoc. prof, 49-.

KOCH, Edward William, *Pharmacology.* Lawrenceburg, Ind, 1/8/82, died, 46. A.B, Indiana, 08, A.M, 09; M.D, Rush, 11. Indiana, instr, 13-15; Eli Lilly & Co, 15-18; Buffalo, prof, 18-44, dean, 30-44.

KOCH, G(eorge) David, *Geography.* Winside, Nebr, 12/2/02; m. 35, c. 2. A.B, Nebr. State Teachers Col, 29; M.S, Nebraska, 34; Ph.D, 38. Ind. State Teachers Col, assoc. prof, 39-.

KOEHL, Eleanor M(ercedes), *Chemistry.* Cleveland, O, 4/26/04. B.S.E, Notre Dame Col, 28; M.S, Notre Dame, 33, Ph.D, 37. Wayne, asst. prof, 42-.

KOEHRING, Vera, *Biology.* Indianapolis, Ind, 8/1/96. A.B, Butler, 16; A.M, Smith Col, 24; Ph.D, Pennsylvania, 29. Butler, 22-23; Bur. Fisheries, 31-35; Hunter Col, instr, 37-.

KOEPKE, Charles Augustus, *Mechanical engineering.* Garrett, Ind, 11/7/93; m. 14. B.S, Purdue, 20; M.S, Colorado, 28. Studebaker Corp, asst. supt, 23-25; Minnesota, 29-42, prof, 37-42.

KOFFLER, Heinrich, *Bacteriology, Biochemistry.* Vienna, Austria, 9/17/22, nat, 45; m. 46. B.S.A, Arizona, 43; M.S, Wisconsin, 44, Ph.D, 47. Purdue, 47-, assoc. prof, co-ordinator res, 49-.

KOHL, E(dwin) J(acob), *Botany.* Myerstown, Pa, 4/27/93. B.S, Albright Col, 15; M.S, Purdue, 19; Ph.D, Wisconsin, 29. Purdue, 19-41, assoc. prof, 33-41; Lakeside Biol. Prods, 41-.

KOHLMEYER, W(illiam), *Poultry husbandry.* Blue Earth, Minn, 8/24/06; m. 31, c. 2. B.S, Iowa State Col, 28; M.S, Purdue, 38. Purdue, agr. exten, 28-41, exp. sta, 41-44; S. Dak. State Col, prof, 44-.

KOHLSTAEDT, Kenneth G(eorge), *Medicine.* Indianapolis, Ind, 5/10/08; m. 35, c. 2. B.S, Indiana, 30, M.D, 32. Lilly Labs, dir. clin. res, 45-; Indiana, sch. med, 37-, assoc. prof, 48-.

KOHNKE, Helmut, *Agronomy.* Rostov, Russia, 8/6/01, nat, 40; m. 36, c. 2. B.Sc, Berlin, 25, Dr. Agr, 26; M.Sc, Alberta, 32; Ph.D, Ohio State, 34. Ind. agr hydrol. studies, 39-43; Purdue, soil sci, 43-.

KOKOMOOR, F(ranklin) W(esley), *Mathematics.* Dale, Ind, 6/10/90; m. 17, c. 3. B.S, Valparaiso, 15; A.M, Michigan, 24, Ph.D, 26. Florida, 27-, prof, 31-.

KOLKA, Alfred J(erome), *Organic chemistry.* Irma, Wis, 4/1/14; m. 41, c. 1. B.S, Notre Dame, 36, M.S, 37, Ph.D, 39. Ethyl Corp. (Detroit), 43-.

KONOPINSKI, Emil J(ohn), *Physics.* Michigan City, Ind, 12/25/11. A.B, Michigan, 33, A.M, 34, Ph.D, 36. Indiana, 38-, prof, 45-.

KOONTZ, Ralph F(redrick), *Chemistry.* Detroit, Mich, 4/10/21; m. 43, c. 1. B.S, Indiana, 42. Magnavox Co. (Ft. Wayne), 46-.

KORNBLUM, Nathan, *Organic chemistry.* N. Y. C, 3/22/14; m. 47. B.S, N. Y. U, 35, M.S, 37; Ph.D, Illinois, 40. Purdue, 43-, assoc. prof, 48-.

KORNFELD, Edmund C(arl), *Organic chemistry.* Philadelphia, Pa, 2/24/19; m. 45. A.B, Temple, 40, A.M, 42; M.A, Harvard, 44, Ph.D, 46. Eli Lilly & Co, 46-.

KOSSACK, Carl F(rederick), *Mathematical statistics.* Chicago, Ill, 5/30/15; m. 40, c. 3. B.A, California L. A, 35, M.A, 36; Ph.D, Michigan, 39. Purdue, assoc. prof, 47-.

KOSTER, John, *Metallurgy.* Indianapolis, Ind, 7/21/02; m. 29, c. 1. B.Ch.E, Purdue, 24; M.S, Utah, 30; Ph.D, Maryland, 34. U. S. Bur. Mines, 48-.

KOZACIK, Alfred P(eter), *Chemistry.* Whiting, Ind, 7/31/11; m. 41, c. 2. B.S, Illinois, 33; Ph.D, Hopkins, 36. Socony-Vacuum Oil Co, 36-.

KRAEMER, J. Hugo, *Forestry.* Albany, N. Y, 4/7/09; m. 35. B.S, Idaho, 34; M.F, Harvard, 35; Ph.D, Yale, 43. Purdue, asst. prof, 47-.

KRAHL, M(aurice) E(dward), *Biochemistry, Pharmacology.* Cambridge, Ind, 9/17/08; m. 32. A.B, DePauw, 29; Ph.D, Hopkins, 32. Eli Lilly & Co. (Ind.), 33-44; Washington (St. Louis), med. sch, 46-, assoc. prof, 49-.

KRAMER, Herbert H(arvey), *Agronomy.* Brighton, Colo, 9/23/16; m. 39, c. 2. B.S, Colo. A. & M. Col, 29; M.S, Minnesota, 15, Ph.D, 46. Purdue, assoc. agron, 46-.

KRAMER, Martha M(orrison), *Nutrition.* Frankfort, Ind. B.S, Chicago, 16; Ph.D, Columbia, 22. Kans. State Col, 22-, prof, 25-36, asst. dean, 45-.

KRAMER, Paul J(ackson), *Plant physiology.* Brookville, Ind, 5/8/04; m. 31, c. 2. A.B, Miami (O.), 26; M.S, Ohio State, 29, Ph.D, 31. Duke, 31-, prof, 45-.

KRANTZ, Bert A(llan), *Agronomy.* Mears, Mich, 2/12/14; m. 41, c. 2. B.S, Mich. State Col, 38; M.S, Purdue, 40, Ph.D, 43. N. C. State Col, exp. sta, 46-, res. prof, 48-.

KRANZ, Fred(erick) W(illiam), *Physics, Otology.* Dixon, Ill, 9/26/87. A.B, Lawrence Col, 11; A.M, Wisconsin, 19; Ph.D, Chicago, 22. Magnavox Co. (Ft. Wayne), res, 31-34; Sanotone Corp, 36-.

KRAUS, Charles A(ugust), *Chemistry* (starred). Knightsville, Ind, 8/15/75; m. 02, c. 4. B.S, Kansas, 98; Ph.D, Mass. Inst. Tech, 08. Clark, prof, 14-24; Brown, prof, dir. res, 24-. Nichols medal, 23; Gibbs medal, 35; Richards medal, 36; Franklin medal, 38. Natl. Acad. Sci; Chem. Soc. (pres, 39); Philos. Soc; Physical Soc; Am. Acad. Conduction in glass; vacuum seals; electrical apparatus; gases and chemical processes.

KRAUSE, Arthur H(erman), *Chemistry.* Magdeburg, Germany, 2/1/02, nat, 32; m. 40, c. 2. B.Sc, Chicago, 39. Marbon Corp. (Gary), res. chem, 45-.

KRASKOPF, Francis C(raig), *Chemistry.* Richmond, Ind, 11/13/77, died, 48. A.B, Indiana, 04; A.M, Wisconsin, 07, Ph.D, 09. Wisconsin, 06-46, prof, 29-46.

KRAYBILL, Henry Reist, *Agricultural chemistry.* Mt. Joy, Pa, 5/1/91; m. 16, c. 3. B.S, Pa. State Col, 13; M.S, Chicago, 15, Ph.D, 17. Purdue, head dept, 26-41; American Meat Inst, dir. dept. sci. res, 41-.

KREIDER, Henry R(oyer), *Chemistry.* Baltimore, Md, 12/31/11; m. 36, c. 2. B.S, Toledo, 33; M.A, Ohio State, 35, Ph.D, 36. Mead Johnson & Co, (Evansville), 42-45.

KREIDER, Leonard C(ale), *Chemistry.* Sterling, O, 2/16/10; m. 33, c. 3. A.B, Goshen Col, 31; M.Sc, Ohio State, 33, Ph.D, 36. Bethel Col. (Kans.), prof, 37-.

KRIEBEL, Ralph Meschter, *Botany, Conservation.* Hereford, Pa, 10/12/97, died, 46. A.B, Valparaiso. Ind. high schs, 3 years; U. S. Soil Conserv. Serv. (Bedford, Ind.), 35-43; Purdue, exten. serv, 43-46. Active in Ind. Acad. Sci. flora committee.

KROC, Robert L(ouis), *Zoology, Physiology.* Chicago, Ill, 6/19/07. A.B, Oberlin Col, 29, A.M, 31; Ph.D, Wisconsin, 33. Indiana, 33-40, asst. prof, 37-40.

KROECKEL, C(larence) J(ohn), *Zoology, Histology.* Defiance, O, 4/1/02. M.S, Catholic, 33. St. Joseph's Col. (Ind.), 33-, prof, 38-.

KROEGER, J(ohn) W(illiam), *Organic chemistry.* South Bend, Ind, 11/17/13; m. 39, c. 4. B.S, Notre Dame, 34, M.S, 35, Ph.D, 37. F. H. Levey Co, mgr. org. res, 40-.

KRONSBEIN, John, *Physics.* Ohiowa, Nebr, 11/27/04; m. 33. Dr, Jena, 31. Hoosier-Cardinal Corp. (Evansville), ch. res, 45-.

KRUMHOLZ, Louis A(ugustus), *Zoology.* Harrington, Wash, 12/1/09; m. 39. B.S, St. Thomas Col. (Minn.), 32; M.S, Illinois, 38; Ph.D, Michigan, 45. Indiana, 45-.

KRYTER, Karl David, *Psychology*. Indianapolis, Ind, 10/13/14; m. 46, c. 2. A.B, Butler, 39; Ph.D, Rochester, 43. Bolling Air Force Base (Wash, D. C.), 48-.

KUBICEK, Naci F(rank), *Chemical engineering*. N. Y. C, 2/22/11; m. 48. B.S, California, 33; M.S, Mass. Inst. Tech, 36. Standard Oil Co. Ind, 36-41.

KUENTZEL, Ward E(dward), *Chemistry*. Taylor, Minn, 10/17/93; m. 18, c. 2. B.S, Minnesota, 17; M.S, Geo. Washington, 24, Ph.D, 28. Standard Oil Co. Ind, group leader, 30-.

KUNTZ, Albert, *Anatomy* (starred), *Embryology*. Batesville, Ind, 3/19/79; m. 12, c. 1. A.B, Morningside Col, 04; Ph.D, Iowa, 10; M.D, St. Louis, 18. St. Louis, sch. med, 13-, prof, 19-30, microanat, 30-46, dir. dept, 30-.

KUNZ, Kaiser Schoen, *Applied mathematics*. New Middletown, Ind, 10/15/15; m. 44, c. 1. A.B, Indiana, 36; A.M, Cincinnati, 37, Ph.D, 39. Harvard, 42-, res, 45-47, computation lab, 47-.

KURIE, Franz N(ewell) D(evereux), *Physics*. Victor, Colo, 8/6/07; m. 37. B.Sc, McGill, 27; Ph.D, Yale, 32. Indiana, 38-46, assoc. prof, 40-46; Naval Res. Lab, supt. nucleonic div, 48-.

KURTZ, (Lester) Touby, *Agronomy*. Howard Co, Ind, 11/7/14; m. 40, c. 1. B.S, Purdue, 38; Ph.D, Illinois, 43. Illinois, exp. sta, 38-44, assoc. prof, 45-.

KURTZ, Russell A(ugust), *Chemistry*. Buffalo, N. Y, 8/30/15; m, c. 2. B.S, Manhattan Col, 38; M.S, Notre Dame, 40, Ph.D, 42. Dupont Co, rubber dept, res, 42-46.

KYLE, C(urtis) H(ernon), *Agronomy*. St. Louis Crossing, Ind, 4/8/78; m. 06, c. 1. B.S.A, Kans. State Col, 03. U. S. Dept. Agr, corn invest, 07-44.

KYLE, John Johnson, *Medicine*. Aurora, Ind, 5/27/69, died, 20. M.D, Miami Med. Col. (Cincinnati), 99. Indiana, prof, 00-12; South. California, prof, 13-20.

LACY, Charles E(dward), *Metallurgy*. Grant, Ind, 9/5/18; m. 43, c. 1. B.S.Ch.E, Purdue, 39; M.Sc, Carnegie Inst. Tech, 41, D.Sc, 45. Gen. Elec, 46-.

LADD, J(ohn) Robert, *Chemistry*. Rochester, N. Y, 4/28/17. B.S, Rochester, 39; Ph.D, Purdue, 48. Gen. Elec, 48-.

LaFUZE, H(enry) Harvey, *Botany*. Liberty, Ind, 3/3/08; m. 36, c. 2. A.B, DePauw, 29; M.S, Iowa, 30, Ph.D, 36. East. Ky. State Col, 39-, prof, 47-.

LAHR, Paul H(illmon), *Physical chemistry*. Glasco, Kans, 6/20/07; m. 36, c. 2. B.S, Buena Vista Col, 30; M.S, Iowa, 37, Ph.D, 41. Prest-O-Lite Co. (Ind.), res. eng, 41-45; Linde Air Prods. Co. (Indianapolis), sr. chem, 45-.

LAIDLAW, Harry H(yde), Jr, *Apiculture*. Houston, Tex, 4/12/07. B.S, Louisiana, 33, M.S, 34; Ph.D, Wisconsin, 39. Oakland City Col, prof, 39-41; State Dept. Agr. & Industries, Ala, apiarist, 41-.

LAIRD, Donald A(nderson), *Industrial psychology*. Angola, Ind, 5/14/98; m. 2nd, 40, c. 1. B.A, Dubuque, 19; A.M, Iowa, 21, Ph.D, 23. Colgate, prof, 24-39; consult, 41-.

LAIRD, Raymond L(ee), *Parasitology*. Galveston, Ind, 12/2/08; m. 34. B.S, Columbia, 36; Sc.D, Hopkins, 42. Tennessee, assoc. prof, 46-.

LAMB, George G(oodrich), *Chemical engineering*. Grand Rapids, Mich, 4/26/06; m. 30, c. 2. B.S.E, Michigan, 27, M.S, 28; Ph.D, N. Y. U, 35. Standard Oil Co. Ind, res, 35-41; Northwestern, prof, 46-.

LAMBERT, G(lenn) Frederick, *Biochemistry*. Columbus, O, 11/21/18; m. 45, c. 1. A.B, DePauw, 40; Ph.D, Illinois, 44. Abbott Labs, 46-.

LAMBERT, W(illiam) V(incent), *Animal genetics*. Stella, Nebr, 9/13/97; m. 23, c. 2. B.S.A, Nebraska, 21; M.S, Kans. State Col, 23; Ph.D, California, 31. Purdue, exp. sta, prof. and assoc. dir, 40-45; Nebraska, dean col. agr. and dir. exp. sta, 48-.

LAMEY, Carl Ar(thur), *Geology*. St. Louis, Mo, 10/28/92; m. 24, c. 1. B.S, E.M, Mich. Col. Mines, 25; M.S, Northwestern, 27, Ph.D, 33. Indiana, instr, 27-30; Ohio State, 35-, assoc. prof, 45-46, prof, 46-.

LAMMERTS, W(alter) E(dward), *Genetics*. Terre Haute, Ind, 9/25/04. B.S, California, 27, Ph.D, 30. California L. A, asst. prof, 40-.

LAMPLAND, Carl O(tto), *Astronomy* (starred). Hayfield, Minn, 12/29/73. B.S, Valparaiso, 99; A.B, Indiana, 02, A.M, 05, LL.D, 30. Lowell Observ, 03-.

LAMPREY, Headlee, *Chemistry*. Snohomish, Wash, 10/30/08; m, c. 4. B.S, Washington (Seattle), 31, M.S, 31; Ph.D, Michigan, 35. Linde Air Prods. Co. (Indianapolis), 35-.

LANCZOS, C(ornelius), *Mathematical physics*. Szekesfehervar, Hungary, 2/2/93. B.S, Budapest, 18; Ph.D, Szeged, 21. Purdue, prof, 31-.

LAND, W(illiam) J(esse) G(oad), *Botany*. Alton, Ind, 12/2/65, died, 35. B.S, Chicago, 02, Ph.D, 04. Rome Acad. (Ind.), prin, 91-94; Chicago, 04-31, prof, 28-31.

LANDES, Chester G(rey), *Organic chemistry*. Lowell, Ind, 12/22/03; m. 34, c. 3. B.Ch.E, Ohio State, 26. Am. Cyanamid Co, 37-.

LANDES, Henry, *Geology*. Carroll, Ind, 12/22/67, died, 36. A.B, Indiana, 92; A.B, A.M, Harvard, 93. Washington (Seattle), prof, 95-36, dean col. sci, 13-36; state geol, Wash, 01-36.

LANDIN, Joseph, *Mathematics*. N. Y. C, 1/25/13; m. 34. B.S, Brooklyn Col, 37; M.S, N. Y. U, 41; Ph.D, Notre Dame, 46. Notre Dame, instr, 43-46; Illinois, 46-, asst. prof, 48-.

LANDRUM, Robert D(allas), *Chemical engineering*. Terre Haute, Ind, 2/8/82; died, 45. B.S, Rose Poly. Inst, 04, M.S, 09, Chem.E, 14. Indiana, 04-07; Titanium Alloy Mfg. Co, 25-32; Harshaw Chem. Co, 32-.

LANE, E(mory) W(ilson), *Hydraulic engineering*. Lafayette, Ind, 2/21/91. B.S, Purdue, 12; C.E, Cornell, 14. Miami Conservancy Dist, 14-19; U. S. Bur. Reclamation, res. eng, 29-35; Iowa, prof, 35-42; Tenn. Valley Authority, prin. hydraul. eng, 42-.

LANE, H(enry) H(iggins), *Zoology*. Bainbridge, Ind, 2/17/78; m. 05, c. 3. Ph.B, DePauw, 99; M.A, Indiana, 03; Ph.D, Princeton, 15. Indiana, instr, 06-08; Kansas, prof, 22-48.

LANE, Thomas James, *Organic chemistry*. Merrill, Wis, 5/1/06. A.B, Notre Dame, 29, Ph.D, 42; M.S, Catholic U, 35. Notre Dame, asst. prof, 45-47; Kings Col, prof, 47-.

LANG, A(lvin) L(eonard), *Soil fertility*. Dilsboro, Ind, 9/7/96. B.S, Illinois, 20; M.S, Cornell, 29. Illinois, 29-, asst. ch. field tests, 31-47, prof, 47-.

LANGER, Lawrence M(arvin), *Nuclear physics*. N. Y. C, 12/22/13; m. 36. B.S, N. Y. U, 34, M.S, 35, Ph.D, 38. Indiana, instr, 38-41; Mass. Inst. Tech, res. assoc. radiation lab, 41-42; Indiana, assoc. prof, 46-.

LANNING, Charles E(dward), *Chemistry*. Washington, Kans, 9/16/94; m. 34, c. 1. A.B, Earlham Col, 16; Ph.D, Hopkins, 20. Standard Oil Co. N. J, 20-.

LANSING, Albert I(ngram), *Zoology*. Woodbine, N. Y, 3/13/15; m. 41, c. 4. A.B, Pennsylvania, 37; Ph.D, Indiana, 41. Washington (St. Louis), 47-, assoc. prof, 49-.

LANZL, George Frank, *Chemistry*. Chicago, Ill, 8/9/18; m. 42. A.B, DePauw, 40; Ph.D, Northwestern, 46. Dupont Co, 44-.

LAPENTA, Vincent Anthony, *Chemistry, Bacteriology*. Naples, Italy, 7/4/83, died, 46. In Indianapolis 07-46. World-renowned for discoveries of serums, etc; decorated by three European governments. Member of Ind. Acad. Sci. 15 years.

LARIMORE, J(oseph) W(illiam), *Internal medicine*. Greenfield, Ind, 4/5/87; m, c. 2. A.B, DePauw, 08; M.D, Washington (St. Louis), 13. Washington (St. Louis), 15-, assoc. prof, 25-.

LARISEY, (Mary) M(axine), *Taxonomy, Plant anatomy*. Terre Haute, Ind, 7/1/09. A.B, Washington (St. Louis), 32, M.S, 34, Ph.D, 39. Med. Col. State S. C, asst. prof, 47-.

LARK-HOROVITZ, Karl, *Physics* (starred), *Physical chemistry*. Vienna, Austria, 7/20/93, nat, 36; m. 16, c. 2. Ph.D, Vienna, 19. Purdue, prof, 28-, head dept, 31-. Am. Assn. Adv. Sci. (gen. sec, 48-).

LARRISON, M(illard) S(amuel), *Organic chemistry*. Oak Hill, W. Va, 5/27/05; m. 48, c. 2. A.B, West Virginia, 28; Ph.D, Purdue, 42. Reilly Tar & Chem. Corp. (Indianapolis), 31-38.

LARSEN, Dan H(yrum), *Bacteriology*. Vineyard, Ut, 9/22/17; m. 41, c. 3. B.S, Brigham Young, 40; M.A, Nebraska, 42. Commercial Solvents Co, (Terre Haute), 43-46; Utah, 46-, instr, 48-.

LARSEN, W(illiam) Eugene, *Physical chemistry*. Salt Lake City, Ut, 11/14/06; m. 28, c. 5. B.S, Utah, 29, M.S, 31; Ph.D, Purdue, 35. Dupont Co, 35-.

LARSON, R(aymond) G(eorge), *Chemistry*. Grand Forks, N. Dak, 6/1/09; m. 41, c. 1. B.S, North Dakota, 31, M.S, 34; Ph.D, Purdue, 38. Manchester Col, 37-38; Valparaiso, 39-, assoc. prof, 49-.

La RUE, Carl Downey, *Botany* (starred). Williamsville, Ill, 4/22/88; m. 14, c. 4. B.S, Valparaiso, 10, A.B, 11; A.B, Michigan, 14, A.M, 16, Ph.D, 21. Michigan, 20-, prof, 44-.

LaSALLE, Joseph P(ierre), *Mathematics*. State College, Pa, 5/28/16; m. 42. B.S, Louisiana, 37; Ph.D, Calif. Inst. Tech, 41. Notre Dame, asst. prof, 46-.

LASLETT, L(awrence) Jackson, *Physics*. Boston, Mass, 1/12/13; m. 39, c. 3. B.S, Calif. Inst. Tech, 33; Ph.D, California, 37. Indiana, instr, 39-42; Iowa State Col, 46-, assoc. prof, 47-.

LATHROP, Elbert C(lyde), *Chemistry*. Greensburg, Ind, 10/6/85; m. 12, c. 1. A.B, DePauw, 07, hon. Sc.D, 36; Ph.D, American U, 16. U. S. Dept. Agr, 09-.

LATSHAW, Voris V., *Mathematics*. Frankfort, Ind, 11/10/03; m. 37, c. 2. A.B, Indiana, 27, A.M, 28, Ph.D, 30. Lehigh, 31-, assoc. prof, 47-.

LATTIMORE, S(amuel) A(llan), *Chemistry* (starred). Liberty, Ind, 5/31/28, died, 13. A.B, DePauw, 50, A.M, 53, hon. Ph.D, 73. DePauw, 50-60, prof, 52-60; Rochester, prof, 67-08.

LAUBENGAYER, Richard August, *Botany*. Salina, Kans, 9/10/02. B.S, Cornell, 25, Ph.D, 34. Wabash Col, assoc. prof, 46-.

LAUBSCHER, A(ner) N(earhood), *Organic chemistry.* Mediapolis, Iowa, 3/29/16; m. 41, c. 2. B.S, Iowa Wesleyan Col, 36; Ph.D, Indiana, 42. Carnegie-Ill. Steel Corp, 48-.

LAUFER, Maurice K(enneth), *Physics.* Indianapolis, Ind, 5/14/09; m. 32. A.B, Ripon Col, 30; Sc.M, Brown, 32. U. S. Bur. Standards, 36-46.

LAULETTA, Paul A(ndrew), *Metallurgical engineering.* Chicago, Ill, 1/23/20; m. 46, c. 2. B.S, Purdue, 41. Joslyn Mfg. & Supply Co. (Ft. Wayne), 46-.

LAWRENCE, John V(incent), *Internal medicine.* Terre Haute, Ind, 6/18/93; m. 20. B.S, Chicago, 17; M.D, Rush, 24. Washington (St. Louis), asst. prof, 26-46.

LAWRENCE, William E(vans), *Plant ecology, Botany.* Randolph Co, Ind, 4/15/83, died, 47. B.S, Earlham Col, 04. Oregon State Col, 10-47, assoc. prof, 20-47.

LAWSHE, C(harles) H(ubert), Jr, *Psychology.* Swayzee, Ind, 5/26/08; m. 30, c. 1. B.S, Purdue, 29, Ph.D, 40; M.A, Michigan, 35. Ind. high sch, 31-37; Purdue, prof, 41-.

LAWSON, Edwin H(ugh), *Pathology, Bacteriology.* Indianapolis, Ind, 5/13/99; m. 28, c. 3. B.S, Arkansas, 20; M.D, Tulane, 24. Tulane, 20-, prof, 40-.

LAYMAN, James W(alter), *Clinical psychology.* Cleveland, O, 12/8/04. A.B, Western Reserve, 32, A.M, 33; Ph.D, Iowa, 36. Indiana, asst. prof, 42-46; North Carolina, prof, 47-.

LEAF, Clyde W(illiam), *Organic chemistry.* Evansville, Ind, 1/12/10; m. 35, c. 1. A.B, Evansville Col, 34; Ph.D, Columbia, 41. Sharples Chemicals, Inc, res, 43-.

LEASURE, J(ohn) Kent, *Otolaryngology.* Auburn, Ind, 1/6/91; m. 19, c. 2. B.S, Indiana, 16, M.D, 18; M.S, Pennsylvania, 24. Indiana, sch. med, assoc. prof, 44-.

LEATHEROCK, Constance, *Geology.* Rensselaer, Ind, 2/22/98. B.S, Oklahoma, 27. U. S. Geol. Surv, 32-.

LEAVENWORTH, F(rancis) P., *Astronomy.* Mt. Vernon, Ind, 9/3/58, died, 28. A.B, Indiana, 80, A.M, 87. Minnesota, 92-28, prof, 97-28.

LeBLANC, Floyd J(oseph), *Pharmacy.* Madelia, Minn, 5/30/97; m. 31. Ph.G, S. Dak. State Col, 22, Ph.C, 23, B.S, 24, M.S, 27; Ph.D, Purdue, 38. S. Dak. State Col, 22-, prof, 38-40, dean, 41-.

LECKY, Herbert S(idell), *Chemistry.* Holmes Co, O; m. 38, c. 1. A.B, Hiram Col, 37; M.A, Oberlin Col, 38; Ph.D, Purdue, 41. Dupont Co, 41-.

LEE, C(harles) O(ren), *Pharmacy.* McCune, Kans, 11/25/83; m. 24, c. 2. B.Sc, Kansas, 13; M.S, Chicago, 17; Ph.D, Wisconsin, 30. Purdue, prof, 15-20, 26-.

LEE, Henry M(offett), *Pharmacology.* Pyongyang, Korea, 12/4/06. A.B, Occidental Col, 29; M.A, California, 31, Ph.D, 34. Eli Lilly & Co, res, 34-.

LEE, I(ra) E(lver), *Chemistry.* Alamo, Ind, 7/10/83; m. 15. A.B, Indiana, 11, M.A, 12; Ph.D, Cornell, 15. Dupont Co, 18-48.

LEE, Oliver C., *Botany.* Bergen, Norway, 2/2/02; m. 29. B.S, Mont. State Col, 26; M.S, State Col. Wash, 28. Purdue, exten, 29-.

LEE, Robert J(ames), *Chemistry.* San Jose, Ill, 1/4/16; m. 38, c. 3. A.B, St. Olaf Col, 37; A.M, Indiana, 38, Ph.D, 41. Pan American Ref. Corp, head explor. chem. res, 45-.

LEEDY, J(ohn) W(entworth), *Botany.* Warsaw, Ind, 12/4/67; m. 93, c. 1. B.S, Minnesota, 99; M.S, Wisconsin, 16. Marion Col, prof, 20-22, pres, 22-27; Wheaton Col, prof, 28-44.

LEFFLER, Marlin T(empleton), *Organic chemistry.* College Corner, Ind, 2/28/11; m. 33, c. 3. Miami (O.), 32; M.A, Illinois, 33, Ph.D, 36. Abbott Labs, 36-, asst. dir. res, 49-.

LEFFORGE, J(esse) H., *Agronomy.* Oaklandon, Ind, 11/89; m. 13, c. 1. B.S, Purdue, 18; M.S, Minnesota, 26. Purdue, prof, 28-.

LEFLER, Glenn Q(uentin), *Physics.* Huntington Co, Ind, 12/31/05; m. 31, c. 2. A.B, Indiana, 29, M.A, 32, Ph.D, 36. Kent State U, assoc. prof, 36-46; East. Ill. State Col, 46-.

LEFLER, Ralph W(aldo), *Physics.* Huntington Co, Ind, 8/9/02; m. 27, c. 3. A.B, Indiana, 26, A.M, 27. High sch. and jr. Col, 27-43; Purdue, 43-, asst. prof, 47-.

LEHMAN, R(obert) W(illiam), *Chemistry.* Terre Haute, Ind, 12/20/17; m. 40, c. 3. A.B, Grinnell Col, 39. Distillation Prods, Inc, res. chem, 40-.

LEHMER, D(errick) N(orman), *Mathematics* (starred). Somerset, Ind, 7/27/67, died, 38. A.B, Nebraska, 93, A.M, 96; Ph.D, Chicago, 00. California, 00-, prof, 18-.

LEIGHTY, J(ohn) A(dam), *Chemistry.* Shelbyville, Ill, 3/31/10; m. 38, c. 2. A.B, James Millikan, 31; M.S, Purdue, 33, Ph.D, 36. Eli Lilly & Co, 36-, supt. antibiotics, 46-48, asst. dir. div. biochem, 48-.

LEIS, Donald G(eorge), *Organic chemistry.* Jeannette, Pa, 8/26/19; m. 45, c. 2. B.S, St. Vincent Col, 41; M.S, Notre Dame, 42, Ph.D, 44. Carbide & Carbon Chems. Corp, project leader, 46-.

LEITCH, Andrew, *Psychology*. Glencoe, Ont, Can, 12/16/85, nat, 25; m. 11, 30, c. 2. B.A, Butler, 11, M.A, 12; B.D, Yale, 14, Ph.D, 19. Bethany Col. (W. Va.), prof, 20-; Butler, prof, summers 24-27 and 30.

LEITCH, R(ichard) D(uddleston), *Chemical engineering*. Terre Haute, Ind, 4/18/94; m. 34. B.S.Ch.E, Rose Poly. Inst, 16. U. S. Bur. Mines, gas chem, 19-, safety dir, 45-.

LEITER, Russell G(raydon), *Psychology*. South Bend, Ind, 7/16/01. Ed.B, California L. A, 28; M.A, Southern California, 29, Ph.D, 38. U. S. Veterans Admin, 45-.

LEITH, Carlton J(ames), *Geology*. Madison, Wis, 9/24/19; m. 41, c. 2. B.A, Wisconsin, 40, M.A, 41; Ph.D, California, 47. Indiana, 47-49, asst. prof, 48-49.

LEMME, Maurice M(iller), *Mathematics*. Somerville, Ind, 2/23/05; m. 29, c. 1. A.B, Oakland City Col, 26; A.M, Indiana, 28; Ph.D, Purdue, 47. San Diego State Col, assoc. prof, 48-.

LEMMON, Norman Edward, *Chemistry*. Wilmington, Del, 3/17/00; m. 28, c. 1. B.S, Hopkins, 22. Standard Oil Co. Ind, 23-, tech. chem, 28-41, group leader res, 41-47, res. assoc, 47-.

LENTZ, Paul Lewis, *Botany*. Indianapolis, Ind, 5/26/18; m. 43, c. 1. A.B, Butler, 40; M.S, Iowa, 42. U. S. Dept. Agr, assoc. mycol, 47-.

LEONARD, Frederick C(harles), *Astronomy, Meteoritics*. Mt. Vernon, Ind, 3/12/96; m. 42, c. 2. S.B, Chicago, 18, S.M, 19; Ph.D, California, 21. California L. A, 22-, assoc. prof, 31-44, prof, 44-.

LEOPOLD, A(ldo) Carl, *Plant physiology*. Albuquerque, N. Mex, 12/18/19; m. 42, c. 2. B.A, Wisconsin, 40; M.A, Harvard, 47, Ph.D, 48. Purdue, asst. prof. hort, 49-.

LESQUEREAUX, Leo, *Botany*. Switzerland, 1806, died, 89. With David D. Owen, geol. survey of New Harmony.

LESTER, Horace H., *Physics*. Shelburn, Ind, 12/30/83; m. 15, c. 2. A.B, Minnesota, 06; M.A, Washington (Seattle), 12; Ph.D, Princeton, 15. Watertown Arsenal, sr. phys, 22-.

LeSUER, William M(onroe), *Chemistry*. Ingram, Pa, 10/13/20; m. 44, c. 1. B.S, Monmouth Col, 42; Ph.D, Indiana, 48. Lubrizol Corp. (Cleveland), res, 48-.

LETSINGER, Robert L(ewis), *Chemistry*. Bloomfield, Ind, 7/31/21; m. 43. c. 2. B.S, Mass. Inst. Tech, 43, Ph.D, 45. Northwestern, 46-, asst. prof, 48-.

LEVAN, W(illiam) C(hristian), *Physiology*. Catawissa, Pa, 85. A.B, DePauw, 10; A.M, Michigan, 14; Ph.D, Pennsylvania, 29. Findlay Col, prof. biol, 29-.

LEVY, Gabor B(ela), *Chemistry*. Budapest, Hungary, 7/16/13; m. 38, c. 3. Dipl. Ing, Tech. Hochschule Karlsruhe, 38. Schenley Labs. (Ind.), sr. res. chem, 42-.

LEWINSKI, Robert John, *Psychology*. Toledo, O, 2/10/12; m. 40. Ph.B, Toledo, 34; A.M, Iowa, 36, Ph.D, 39. Great A. & P. Tea Co, Indianapolis, personnel mgr, 48-.

LEWIS, Clayton R(oy), *Physics, Engineering*. Ellenburg, N. Y, 12/05/08. B.S, Middelbury Col, 31; A.M, Brown, 33, Ph.D, 39. Chrysler Corp, 36-, exp. eng, 38-, in chg. eng. res, ordnance plant (Evansville), 43-.

LEWIS, Frank Clark, *Agricultural engineering*. Fontana, Kans, 7/25/84; m. 14, c. 3. B.S, Kans. State Col, 13, A.E, 19; M.S, Nebraska, 30. Purdue, assoc. prof, 17-.

LEWIS, I(saac) M(cKinney), *Botany*. Rensselaer, Ind, 9/21/78, died, 43. A.B, Indiana, 06, A.M, 07, Ph.D, 09. Texas, 09-, prof, 19-.

LEWIS, J(ames) Franklin, *Organic chemistry*. DeSoto, Ind, 3/14/03, died, 45. A.B, DePauw, 25; A.M, Ohio State, 27, Ph.D, 30. Ark. Col, prof, 39-45.

LEWIS, L(eonda) L(amonte), *Chemistry*. Ripley, N. Y, 7/14/17; m. 43, c. 1. A.B, Greenville Col, 42; Ph.D, Purdue, 47. Dupont Co, 46-.

LEWIS, R(obert) W(illiam), *Chemistry*. Carterville, Ill, 3/25/18; m. 40, c. 1. B.Ed, South. Ill. Nor. U, 40; M.A, Indiana, 42, Ph.D, 43. Shell Oil Co, group leader, 43-.

LEWIS, Walter Richard, *Food chemistry*. Eau Claire, Wis, 6/4/17; m. 41, c. 3. B.S, Wisconsin, 41; M.S, New Hampshire, 43; Ph.D, Purdue, 48. Kingan & Co. (Indianapolis), 47-.

LICHTENBERG, Chester, *Engineering*. N. Y. C, 8/27/84; m. 20, c. 4. E.E, Columbia, 06. Gen. Elec, 07-, managing eng. Ind. 31-48, asst. to works mgr, 48-.

LICHTENSTEIN, Parker E(arl), *Psychology*. Somerville, Mass, 6/25/15; m. 43, c. 2. B.S, Mass. State Col, 39, M.S, 41; Ph.D, Indiana, 48. Denison, assoc. prof, 49-.

LIEBER, Richard. Germany, 1869, died, 46. Ind. State Park Comn, chm, 15-19; Ind. State Bd. Forestry, sec, 17-19; dir. conserv, Ind, 19-32; Ind. Acad. Sci. (v. p, 32). "Created" Ind. State Parks.

LIEFELD, T(heodore) A(lbert), *Forestry*. Ft. Wayne, Ind, 11/30/04; m. 32, c. 1. B.S.F, Mich. State Col, 29; M.S, Pa. State Col, 31. U. S. Forest Serv, 31-44.

LIEN, Arthur P(hilip), *Organic chemistry.* Liberal, Kans, 5/27/14; m. 42, c. 2. A.B, Ottawa (Kans.), 37; M.Sc, Ohio State, 39, Ph.D, 41. Standard Oil Co. Ind, 41-, group leader, 46-.

LIFE, Andrew Creamor, *Botany.* Grant Co, Ind, 7/30/69, died, 33. A.B, Indiana, 96, A.M, 97. South. Calif, 07-33, prof, 15-33.

LIFE, Frank M., *Physics.* Grant Co, Ind, 9/1/70, died, 33. B.S, DePauw, 96. Marion Col, 97-12; Muncie Natl. Inst, 12-16, dean, 14-16.

LIGETT, W(aldo) B(urford), *Organic chemistry.* Middletown, O, 11/2/16; m. 40, c. 3. B.S, Antioch Col, 39; M.S, Purdue, 41, Ph.D, 44. Ethyl Corp, res. co-ordinator, 44-.

LIGHT, Amos E(llis), *Biochemistry.* Greencastle, Ind, 10/22/10; m. 43, c. 1. A.B, DePauw, 30; M.A, Syracuse, 32. Wellcome Res. Labs, 36-, biochem, 46-.

LIGHT, George H(eyser), *Mathematics.* Bedington, W. Va, 3/19/75. A.B, Princeton, 99, A.M, 00; Ph.D, Yale, 16. Purdue, instr, 05-13; Colorado, prof, 14-44.

LILLY, Eli, *Archeology.* Indianapolis, Ind, 4/1/85; m. 27, c. 1. Ph.C, Philadelphia Col. Phar. and Sci, 07, Ph.M, 35. Eli Lilly & Co, 09-, gen. supt, 15-20, v. p, 20-32, pres, 32-48. Ind. Acad. Sci. (pres, 38).

LINCOLN, Ralph E(rnest), *Genetics.* Grinnell, Ia, 6/25/12; m. 42. B.S, Iowa State Col, 34, Ph.D, 39; M.S, Nebraska, 36. Purdue, 40-48; Camp Detrick, microbiol, 48-.

LIND, Edmund L(e Roy), *Chemistry.* Joliet, Ill, 1/31/00; m. 32, c. 2. A.B, Wabash Col, 21; Ph.D, Chicago, 31. Wabash Col, 21-33; Cent. Washington Col. Educ. (Ellensburg), 36-.

LINDAHL, Lawrence G(aylord), *Industrial psychology.* Wausa, Nebr, 7/2/01; m. 28, c. 1. B.A, Iowa, 24; M.A, Wisconsin, 28; Ph.D, Purdue, 44. P. R. Mallory & Co. (Indianapolis), 43-44; Todd Co, personnel dir, 45-.

LINDBERG, R(amon) I(verson), *Chemical engineering.* Phillips, Wis, 12/17/16; m. 43. B.S, Cincinnati, 39; M.S, Purdue, 42. Jos. E. Seagram Co, res, 39-42; Sinclair Ref. Co, group leader, 46-.

LINDERT, A(lbert) W(ylie), *Organic chemistry.* Mason City, Ia, 1/14/11; m. 34, c. 5. B.Ch.E, Minnesota, 31. Standard Oil Co. Ind, group leader res, 47-.

LINDGREN, Vincent V(ictor), *Chemistry.* N. Y. C, 4/9/20; m. 44, c. 1. A.B, DePauw, 41; Ph.D, Purdue, 45. Am. Cyanamid Co, res, 46-.

LINDLEY, Ernest H(iram), *Psychology* (starred), *Philosophy.* Paoli, Ind, 10/2/69, died, 40. A.B, Indiana, 93, A.M, 94; Ph.D, Clark, 97. Indiana, 93-17, prof, 02-17; Idaho, pres, 17-20; Kansas, chancellor, 20-39.

LINDLEY, Stanley B(ryan), *Psychology, Psychiatry.* Bloomington, Ind, 6/9/06; m. 38, c. 2. A.B, Kansas, 27; A.M, Stanford, 28; Ph.D, Yale, 33; M.D, Minnesota, 39. Yale, 29-34; Minnesota, instr, 34-37; Willmar Minnesota State Hosp, supt, 43-.

LINDQUIST, Carl Gustav, *Chemistry.* Middletown, Conn, 12/11/13; m. 39, c. 1. B.S, Purdue, 36. Stanford, asst. prof, 46-.

LINDSEY, Alton A(nthony), *Plant ecology, Botany.* Monaca, Pa, 5/7/07; m. 39, c. 2. B.S, Allegheny Col, 29; Ph.D, Cornell, 37. Byrd Antarctic exped, biol, 33-35; Purdue, asst. prof, assoc. prof, 47-.

LINDSEY, Tate J(efferson), *Physics.* Morton, Miss, 10/1/03; m. 46. B.A, Miss. Col, 28; N. Y. U, 28-31; Ph.D, Indiana, 36. Clemson Col, prof, 46-.

LINEGAR, Charles R(amon), *Pharmacology.* Brookville, Ind, 9/27/05. A.B, DePauw, 27; Ph.D, Western Reserve, 34. Georgetown, 34-, asst. prof, 36-.

LINGARD, A(mos) L(ister), *Physical chemistry, Engineering.* Princeton, Kans, 11/12/11. B.S, Ottawa (Kans.), 35; A.M, Kansas, 37, Ph.D, 40. Servel, Inc. (Evansville), res. chem, 40-.

LINGO, Shirley P(owell), *Organic chemistry.* Huntington, Ark, 10/30/12; m. 47. B.A, N. Texas State Teachers Col, 34; Ph.D, Texas, 39. Commercial Solvents Corp. (Terre Haute), res. chem, 39-.

LINK, Karl Paul, *Agricultural chemistry.* La Porte, Ind, 1/31/01; m. 30, c. 2. B.S, Wisconsin, 22, M.S, 23, Ph.D, 25. Wisconsin, asst. prof. to prof. biochem, 27-. Natl. Acad. Science.

LINK, Theodore A(ugust), *Geology.* La Porte, Ind, 1/19/97; m. 21, c. 4. B.S, Chicago, 18, Ph.D, 27. Imp. Oil Ltd, in chg, 27-48.

LINN, M(anson) B(ruce), *Plant pathology.* New Ross, Ind, 6/15/08; m. 32, c. 2. A.B, Wabash Col, 30; Ph.D, Cornell, 40. Wabash Col, instr, 30-32; Illinois, asst. prof, 42-.

LINSK, Jack, *Organic chemistry.* N. Y. C, 5/20/18; m. 39. B.S, Col. City N. Y, 40; M.S, Iowa, 41; Ph.D, Ohio State, 48. Standard Oil Co. Ind, 48-.

LIPPINCOTT, Samuel B(udd), *Organic chemistry.* Niwot, Colo, 4/7/05. A.B, Union Col. (Nebr.), 27; M.S, Purdue, 31, Ph.D, 37. Commercial Solvents Corp. (Terre Haute), res, 36-42; Standard Oil Develop. Co, 42-.

LIST, Geo(rge) M(ilton), *Entomology*. Southport, Ind, 4/14/85; m. 12, c. 2. B.S, Purdue, 09; M.S, Colo. A. & M. Col, 25; Ph.D, Iowa State Col, 31. Colo. A. & M. Col, exp. sta, 13-, assoc. prof, 31-44, head dept, 44-.

LISTON, Jesse G., *Geology*. Clay Co, Ind, 5/2/70, died, 41. Taught (Clay Co, Ind.), 40 years. An authority on geology of Clay Co.

LISTON, Joseph, *Aeronautical engineering*. Clay Co, Ind, 6/23/06; m. 31, c. 2. B.S, Purdue, 30, M.E, 35. Purdue, asst. prof. to prof, 37-.

LITTLE, Neil, *Mechanical engineering*. Darlington, Ind, 9/5/01; m. 34, c. 2. A.B, DePauw, 23; A.M, Michigan, 26. Purdue, 25-, assoc. prof, 47-.

LIVEXEY, Robert L(ee), *Biology*. Stockton, Calif, 1/14/20; m. 46, c. 2. B.S, Ore. State Col, 43, M.S, 44; Ph.D, Cornell, 46. Notre Dame, asst. prof, 49-.

LIVINGSTON, R(obert) L(ouis), *Chemistry*. Ada, O, 11/15/18; m. 43, c. 1. B.S, Ohio State, 39; M.S, Michigan, 41, Ph.D, 43. Purdue, asst. prof, 47-, assoc. prof, 49-.

LIVINGSTON, Robert Teviot, *Engineering*. Indianapolis, Ind, 7/7/96; m, c. 2. M.E, Rensselaer Poly. Inst, 17. Columbia, 21-, prof, 46-.

LLOYD, Robert, *Chemical engineering*. Jackson, Miss, 3/1/16. B.S, Purdue, 38; M.A, Temple, 46. Gary, Ind, eng, 38-41; Kingsbury Ordnance Plant. (Ind.), chem, 41-42; Graham Crowley, Inc, chem. eng, 44-.

LOANE, Clarence M(orrison), *Chemistry*. Baltimore, Md, 2/10/10; m. 36, c. 1. Ph.D, Hopkins, 32. Standard Oil Co. Ind, 34-, sect. leader res, 42-.

LOCKHART, Haines B(oots), *Nutrition biochemistry*. Crawfordsville, Ind, 10/29/30; m. 44, c. 1. A.B, Wabash Col, 42; Ph.D, Illinois, 45. Swift & Co, 45-.

LOCKROW, Laurice L(aird), *Physics, Electrical engineering*. Akron, O, 12/16/96; m. 23. B.S, Purdue, 18, E.E, 23; M.A, Rice Inst, 20; Ph.D, Michigan, 26. Bell Tel. Labs, (Ind.), 27-.

LOCKWOOD, John S(alem), *Surgery*. Shanghai, China, 10/2/07; m. A.B, DePauw, 28; M.D, Harvard, 31; Sc.D, Columbia, 38. Columbia, prof, 46-.

LOCKWOOD, Lewis B(yford), *Mycology, Bacteriology*. Ft. Branch, Ind, 10/8/08; m. 35, c. 3. A.B, Indiana, 28, A.M, 29; Ph.D, Catholic, 34. Purdue, exp. sta, 29-31; U. S. Dept. Agr, north. regional res. lab, 31-.

LOEW, Fred A(aron), *Botany*. Burnips, Mich, 3/8/74; m. 98, c. 1. B.S, Huntington Col. (Ind.), 02; B.S, Mich. State Col, 04; M.A, Michigan, 12. Huntington Col, 05-, prof. biol. and geol, 22-25, prof. biol, 32-.

LOFGREN, Frederick V(alentine), *Pharmacology, Pharmacy*. Seattle, Wash, 4/12/97. B.S, Washington (Seattle), 24, M.S, 25, Ph.D, 30. Valparaiso, asst. prof. to prof, dean, 29-39; Hart Drug Corp, 40-, res. dir, 42-.

LOGAN, W(illiam) N(ewton), *Geology*. Barboursville, Ky, 11/4/69, died, 41; m, c. 2. A.B, A.M, Kansas, 96; Ph.D, Chicago, 00. Miss. Agr. Col, and Miss. State Geol. Surv, 03-16; Indiana, assoc. prof, 16-19, prof, 19-35; state geol, Ind, 19-35. Ed. and co-author *Handbook of Indiana Geology*.

LOHMAN, M(arion) L(ee), *Plant pathology, Botany*. Dayton, O, 11/27/03. A.B, Miami (O.), 24; M.S, Iowa, 26; Ph.D, Michigan, 31. Indiana, asst. prof. bot, 36-41; U. S. Dept. Agr, 41-.

LONG, Alma I(rene), *Developmental psychology*. Newport, Ky, 7/28/83. B.S, Columbia, 23, M.A, 30; Ph.D, West. Reserve, 33. Purdue, assoc. prof. family life, 37-.

LONG, Florence, *Mathematics*. Pierceton, Ind, 2/5/89. B.S, Earlham Col, 13; M.S, Illinois, 18. Earlham, asst. prof. to assoc. prof, 14-.

LONG, Robert W(illiam), *Physical chemistry*. New Albany, Ind, 3/14/17; m. 46. A.B, Ind. State Teachers Col, 38; Ph.D, California, 41. Union Oil Co. Calif, 41-.

LONGDEN, A(ladine) C(ummings), *Physics* (starred). Leesville, O, 2/19/57, died, 41. A.B, DePauw, 81, A.M, 84; Ph.D, Columbia, 00. Knox Col, prof, 01-.

LONGLEY, William Raymond, *Mathematics*. Noblesville, Ind, 10/28/80; m. 06, 41, c. 1. A.B, Butler, 02; B.S, Chicago, 03, M.S, 05, Ph.D, 06. Butler, prof, 03-04; Yale, 06-, asst. prof, 09-20, prof, 20-.

LONGNECKER, Thomas C(hristopher), *Agronomy, Plant physiology*. Union City, Ind, 8/6/13; m. 40, c. 3. B.S, Purdue, 35; M.S, Rutgers, 37, Ph.D, 41. Texas Res. Found, sr. soil sci, 47-.

LONGWELL, Bernard B(arnes), *Biochemistry*. Forseman, Ind, 4/12/04. A.B, Colo. Col, 28; M.S, Colorado, 31, Ph.D, 33. Colorado, asst. prof, 39-.

LOOMIS, N(athaniel) E(dward), *Physical chemistry*. Grand Rapids, Wis, 3/16/88. B.S, Beloit Col, 08; M.S, Syracuse, 09; Ph.D, Hopkins, 11. Purdue, 14-18, asst. prof, 15-18; Standard Oil Develop. Co, 36-, dir. and v. p, 37-.

LORITSCH, J(ohn) A(nton), *Organic chemistry.* Wheeling, W. Va, 12/30/14. B.S, Notre Dame, 36, M.S, 37, Ph.D, 39. Gen. Elec, 40-.

LOTHERS, John Edmond, *Civil engineering.* Perulack, Pa, 7/1/89; m. 22, c. 3. C.E, Valparaiso, 23; M.C.E, Cornell, 30. Gary Tube Co. (Ind.), 23-24; Okla. A. & M. Col, 26-, assoc. prof. archit, 29-46, prof. archit. eng, 46-.

LOUGHRIDGE, Gasper Arthur, *Plant morphology.* North Vernon, Ind, 11/7/00. B.A, Indiana, 25; Ph.D, Rutgers, 31. U. S. Dept. Agr, 34-47.

LOUTTIT, C(hauncey) M(cKinley), *Psychology.* Buffalo, N. Y, 10/9/01. B.S, Hobart Col, 25; Ph.D, Yale, 28. Indiana, 31-, assoc. prof, 37-45.

LOW, John R(outh), Jr, *Metallurgy.* Washington, Pa, 2/19/09; m. 37, c. 3. B.S, Purdue, 31; D.Sc, Carnegie Inst. Tech, 43. Knolls Atomic Power Lab, Gen. Elec, head metal. res. sect, 48-.

LOWELL, Frances E(rma), *Psychology.* Minneapolis, Minn, 10/12/86. A.B, Minnesota, 15, A.M, 17, Ph.D, 19. Indianapolis Nor. Sch, head dept, 21-22; DePauw, assoc. prof, 22-25; Cleveland Bd. Educ, clin. psych, 25-.

LOWNIE, H(arold) W(illiam), Jr, *Metallurgy.* Buffalo, N. Y, 7/11/18; m. 44. B.S, Purdue, 39; M.S, Pittsburgh, 43. Battelle Mem. Inst, asst. super, 45-.

LOY, W(illiam) C(heckley), *Chemistry.* Chicago, Ill, 4/1/13; m. 36, c. 3. B.S.A, Purdue, 34, M.S.A, 36. Wilson & Co, res. chem, 38-47, ch. chem, 47-.

LOZIER, W(illiam) Wallace, *Physics.* Humboldt, Ill, 8/3/06; m. 29, c. 1. A.B, DePauw, 28; Ph.D, Minnesota, 31. Natl. Carbon Co. (O.), 36-, head process eng. lab, 42-.

LUCAS, Alfred M(artin), *Cytology.* New Albany, Ind, 10/16/00; m. 28, c. 2. A.B, Wabash Col, 24; Ph.D, Washington (St. Louis), 29. Iowa State Col, assoc. prof, 35-44; U. S. Dept. Agr, cytopath. 44-.

LUCAS, Elmer L(awrence), *Economic geology, Petrography.* Owensville, Ind, 3/22/98; m. 25, c. 3. A.B, Indiana, 22, A.M, 24; Ph.D, Oklahoma, 34. Phillips, prof, 33-41; Oklahoma, 41-, prof, 46-.

LUCAS, P(aul) S(tanley), *Dairy industry.* Montgomery, Ill, 11/21/90; m. 22, c. 4. B.S, Purdue, 14; M.S, Mich. State Col, 26. Purdue, assoc. prof, 19-22; Mich. State Col, 22-.

LUCKETT, G(eorge) S(parr), *Public health.* Bedford, Ind, 1/4/86; m. 12, c. 2. A.B, Col. Wooster, 07; M.D, Geo. Washington, 12. Stanford, assoc. prof, 30-40, prof. hygiene, 40-.

LUCKETT, J(ames) D(ouglass), *Agronomy.* Washington, D. C, 12/5/91; m. 14, c. 1. B.S.A, Purdue, 16, M.S.A, 19. N. Y. exp. sta. (Geneva), 20-.

LUCKEY, G(eorge) W(ashington) A(ndrew), *Psychology, Education.* Decatur, Ind, 2/11/55, died, 33. A.B, Stanford, 94; A.M, Clark, 95; Ph.D, Columbia, 00. Supt. schs, (Adams Co, Ind.), 78-87; Nebraska, prof. educ, 95-18.

LUCKEY, T(homas) D(onnell), *Biochemistry, Nutrition.* Casper, Wyo, 5/15/19; m. 44, c. 2. B.S, Colo. Agr. Col, 41; M.S, Wisconsin, 44, Ph.D, 46. Notre Dame, asst. res. prof, 46-.

LUCKIESH, Matthew, *Physics* (starred). Maquoketa, Ia, 9/14/83; m. 28, c. 2. B.S, Purdue, 09; M.S, Iowa, 11; E.E, Iowa State Col, 12. Gen. Elec, 10-, dir. applied sci, 20-24, lighting res. lab, 24-.

LUDEMAN, Helen Anna, *Chemistry.* Wolcott, Ind, 2/15/02. B.A, Tex. State Col. Women, 22; M.S, Chicago, 29. Tex. State Col. Women, 23-, asst. prof, 29-46, assoc. prof, 46-.

LUDWIG, C(linton) A(lbert), *Botany.* Windfall, Ind, 10/20/86, died, 41. B.S.A, Purdue, 12, M.S.A, 14; Ph.D, Michigan, 17. S. C. exp. sta, assoc. plant path, 20-.

LUDWIG, Norman Charles, *Engineering.* Chambersburg, Pa, 4/17/06; m. 35, c. 2. B.S, Ill. Inst. Tech, 31; M.S, Chicago, 36. Univ. Atlas Cement Co. (Ind.), 39-.

LUDY, Llewellyn V., *Mechanical engineering.* Millgrove, Ind, 1/26/75; m. 29. B.S, Purdue, 98, M.E, 00. Purdue, 99-48, prof, 12-48.

LUGINBILL, Philip, *Entomology.* Columbus Grove, O, 10/16/84; m. 09, c. 5. B.S.A, Ohio State, 10; M.A, South Carolina, 17; Ph.D, Geo. Washington, 24. U. S. Dept. Agr, 10-; in chg. res. lab. (W. Lafayette).

LULL, P(aul) E(merson), *Speech.* Sayre, Pa, 7/8/03; m. 26, c. 3. A.B, Albion Col, 25; M.A, Michigan, 29; Ph.D, Wisconsin, 39. Purdue, 26-, prof, 46-, dir. forensic activities, 30-.

LUM, James H(enry), *Chemistry.* Whiting, Ind, 7/27/03. B.S, Pa. State Col, 25; Ph.D, Yale, 32. Monsanto Chem. Co, indust. chem. res, 33-.

LUNDBERG, Frank Joel, *Engineering.* Ashton, Idaho, 12/28/16. B.S, Purdue, 40; M.S, Stevens Inst. Tech, 46. Fed. Tele-communication Lab, sr. proj. eng, 42-.

LURIA, Salvador Edward, *Bacteriology.* Turin, Italy, 8/13/12, nat, 47; m. 45. M.D, Turin, 35. Indiana, 43-50, assoc. prof, 47-50.

LUTEN, D(aniel) B(enjamin), *Organic chemistry.* Indianapolis, Ind, 3/15/08; m. 37, c. 3. A.B, Dartmouth Col, 29; Ph.D, California, 33. Shell Develop. Co, 36-.

LUTZ, Anna M., *Genetics.* Lafayette, Ind, 70, died, 38. B.S, Purdue, 90; M.S, Michigan, 91. Carnegie Institution, cytol, 04-11.

LUTZ, Samuel Gross, *Electrical engineering.* Lafayette, Ind, 7/9/07; m. 30. B.S, Purdue, 29, E.E, 33, M.S, 34, Ph.D, 38. Naval Res. Lab. (Wash, D. C.), 40-46; N. Y. U, prof, 46-.

LUX, John Herbert, *Chemistry.* Logansport, Ind, 2/3/18; m. 40, c. 2. B.S, Purdue, 39, Ph.D, 42. Purdue, instr, 39-42; Witco Chem. Co, dir. res, 48-.

LYMAN, Taylor, *Metallurgy.* Lemmon, S. Dak, 9/13/17; m. 42, c. 2. A.B, Stanford, 40; S.M, Harvard, 41; Ph.D, Notre Dame, 44. Notre Dame, instr, 43-44; Bendix Aviation Corp. (South Bend), 44-45; Am. Soc. Metals, ed, *Metals Handbook,* 45-.

LYON, Eric R(oss), *Physics.* Greencastle, Ind, 5/8/93. A.B, Phillips, 11, M.S, 23. Kans. State Col, 21-, assoc. prof, 28-.

LYON, M(arcus) W(ard), Jr, *Zoology, Pathology.* Rock Island Arsenal, Ill, 2/5/75, died, 42. Ph.B, Brown, 97; M.S, Geo. Washington, 00, M.D, 02, Ph.D, 13. U. S. Natl. Museum, 98-12, asst. curator, 07-12; The South Bend Clinic, path, 19-42. Ind. Acad. Sci. (pres, 33). Mammals of Indiana; parasitology.

LYONS, Paul Lightner, *Geology.* Oklahoma City, Okla, 12/23/11; m. 34, 44, c. 2. A.B, DePauw, 33; M.Sc, Tulsa, 42. Carter Oil Co, 35-, tech. super, 46-.

LYONS, Robert E(dward), *Chemistry, Bacteriology.* Bloomfield, Ind, 10/24/69, died, 46; m. 98, c. 1. A.B, Indiana, 89, A.M, 90; Ph.D, Heidelberg, 94. Indiana, 89-38, prof, 95-38.

LYTLE, W(ilbert) Vernon, *Psychology.* Hockinport, O, 4/7/89; m. A.B, Bethany Col, 15; B.D, Yale, 19, Ph.D, 27. DePauw, 27-31, head dept, 28-31.

MABIS, Alton J(ohn), *Chemistry.* Edgerton, Ind, 10/6/20; m. 43, c. 2. B.S, Capital, 42; Ph.D, Ohio State, 47. Procter & Gamble, 47-.

MacALPIN, Archie J(ustus), *Geology.* Saranac, N. Y, 10/2/07; m. 29, c. 3. A.B, Michigan, 36, M.S, 39, Ph.D, 41. Notre Dame, assoc. prof. and head dept, 46-.

McALPINE, R(oy) K(enneth), *Chemistry.* Pierceton, Ind, 8/12/84; m. 12. A.B, Michigan, 06, Ph.D, 21. Michigan, 11-, asst. prof, 21-42, assoc. prof, 42-.

McATEE, W(aldo) L(ee), *Zoology* (starred), *Ornithology, Entomology.* Jalapa, Ind, 1/21/83; m. 05, c. 2. A.B, Indiana, 04, A.M, 06. U. S. Dept. Agr, 04-40, in chg. econ. ornith, 16-21, in chg. div. food habits res, 21-34, tech. adv, 34-40; U. S. Fish & Wildlife Serv, 41-47.

McAULEY, A(uley) A(nderson), *Histology.* Red Lion, Pa, 11/12/12; m. 38, c. 3. A.B, DePauw, 34; Ph.D, California, 41. Mich. State Col, asst. prof, 48-.

McAVOY, Blanche, *Biology.* Mitchell, Ind, 9/11/85. A.B, Cincinnati, 09; M.A, Ohio State, 12; Ph.D, Chicago, 30. Ball State Teachers Col, asst. prof, 21-25; Ill. State Nor, assoc. prof, 26-.

McBEE, E(arl) T(hurston), *Chemistry.* Braymer, Mo, 7/6/06; m. 27, c. 2. A.B, Wm. Jewell Col, 29; M.S, Purdue, 31, Ph.D, 36. Purdue, 35-, prof. and coordinator res. found, 43-, head dept, 49-.

McBETH, William Allen, *Geography.* White City, Ind, 10/21/55, died, 24. Grad, Ind. State Nor. School, 95; Ph.B, Wabash, 96; M.A. Ind. State Nor. Sch, asst. prof, 96-24. Ind. Acad. Sci. (v. p, 14, 19).

McBRIDE, Robert H., *Chemical engineering.* Bellevue, Pa, 11/10/20; m. 45. B.S, Carnegie Inst. Tech, 42. Dupont Co. (E. Chicago, Ind.), develop. eng, 42-.

McBRIDE, Robert W., *Judge, Naturalist.* Richmond Co, O, 1/25/42, died, 26; m. 68. Student of birds. Ch. Justice State Supreme Ct, Ind, 90-93. Rendered much service to Ind. Acad. Sci.

McCALLUM, John, *Chemistry.* Gas City, Ind, 12/31/20; m. 47. B.A, Kalamazoo Col, 42; M.S, Mich. State Col, 44, Ph.D, 48. Eastman Kodak, physical chem, 48-.

McCANN, Willis H(arrison), *Psychopathology, Psychology.* Richmond, Mo, 3/16/07; m. 35, c. 2. A.B, Missouri, 33; A.M, Cornell, 36; Ph.D, Indiana, 40. Mo. State Hosp. No. 2 (St. Joseph), 41-42, clin. psych, 45-.

McCAULAY, David Allan, *Chemistry.* Chicago, Ill, 8/7/13; m. 41, c. 1. B.S, Chicago, 34, M.S, 40. Standard Oil Co. Ind, 40-.

McCAY, Clive M(aine), *Physiological chemistry.* Winamac, Ind, 3/21/98; m. 27. A.B, Illinois, 20; M.S, Iowa State Col, 23; Ph.D, California, 25. Cornell, 27-, prof. nutrition, 34-.

McCLEARY, Rush Fox, *Organic chemistry.* Wyandot Co, O, 12/10/09; m. 37, c. 3. A.B, Ohio Northern, 31; M.S, Purdue, 33, Ph.D, 37. Texas Co, 40-.

McCLINTOCK, J(ames) A(lbertine), *Plant pathology.* Chicago, Ill, 10/31/89; m. 16, c. 3. B.S, Mich. State Col, 13, Ph.D, 44; M.S, Wisconsin, 14. Purdue, prof. hort, 31-.

McCLOY, James H(arvey), *Physics.* Pittsburgh, Pa, 8/2/89; m. 15, c. 2. B.S, Purdue, 13; M.S, Ohio State, 23. Otterbein Col, prof, 13-.

McCLUER, W(ilbert) B(rooks), *Chemistry.* Marshall, Ind, 7/12/04; m. 47, c. 1. A.B, DePauw, 26; M.S, Mass. Inst. Tech, 30. DePauw, instr, 27-28; Rohm & Haas Co, 44-.

McCLUNG, L(eland) S(wint), *Bacteriology.* Atlanta, Tex, 8/4/10; m. 44. A.B, Texas, 31, A.M, 32; Ph.D, Wisconsin, 34. Indiana, 40-, prof, 48-.

McCLURE, F(rank) J(ames), *Nutrition.* Lafayette, Ind, 12/30/96. B.S, Purdue, 19, M.S, 24; Ph.D, Illinois, 30. U. S. Pub. Health Serv, biochem, 36-.

McCLURE, John Allan, *Industrial psychology.* Assumption, Ill, 1/26/07; m. 32, c. 3. B.S, Illinois, 33, M.S, 37; Ph.D, Purdue, 46. Rutgers, assoc. prof, 46-.

McCLURE, S(tandleigh) M(yron), *Chemistry.* New Albany, Ind, 7/31/88. B.S, Drury Col, 14, M.S, 15. McKendree Col, prof, 19-41; Ball State Teachers Col, 41-42; Ind. Central Col, prof, 42-45; Eureka Col, assoc. prof, 46-.

McCORMICK, Clyde T(ruman), *Mathematical physics.* Oblong, Ill, 3/6/08; m. 37, c. 3. A.B, Illinois, 30, A.M, 32; Ph.D, Indiana, 37. Ill. State Nor, prof, 44-.

McCORMICK, John Joseph, *Chemistry.* Terre Haute, Ind, 5/30/99; m. 31, c. 5. B.S, Rose Poly. Inst, 22. Commercial Solvents Co, 23-25; O'Brien Varnish Co. (Ind.), 26-27; Ind. Elec. Co, 27-29; Arco Co, mgr. prods. develop, 45-.

McCORMICK, Robert N(athaniel), *Zoology.* Lexington, Va, 1/21/96; m. 25, c. 2. A.B, Muskingum Col, 21; M.Sc, Ohio State, 22, Ph.D, 32. Ball State Teachers Col. (Ind.), 30-, assoc. prof, 36-.

McCOWN, Monroe, *Horticulture.* Proctorville, O, 5/16/02; m. 24, c. 2. B.Sc, Ohio State, 23, Ph.D, 38; M.Sc, Purdue, 28. Ind. Hort. Soc, sec, 25-27; Purdue, exp. sta, exten. hort. fruits, 27-44.

McCOY, Herbert N(ewby), *Chemistry* (starred). Richmond, Ind, 6/29/70, died, 45; m. 22. B.S, Purdue, 92, M.S, 93; Ph.D, Chicago, 98. Chicago, 01-17, prof, 11-17; Lindsay Light & Chemical Co, v. p, 17-45. Willard Gibbs Medal, 37.

McCOY, Richard H(ugh), *Chemistry.* Wilmington, O, 11/26/08. A.B, Earlham Col, 29; M.S, Illinois, 31, Ph.D, 35. Earlham Col, instr, 29-30; Pittsburgh, 40-42, res. prof. biochem, 43-.

McCREA, Forrest Draper, *Physiology, Pharmacology.* New Richmond, Ind, 3/5/97; m. 22, c. 2. B.S, Purdue, 18; M.S, Illinois, 23; Ph.D, Wisconsin, 27. Duke, assoc. prof, 31-.

McCULLOUGH, A(lbert) W(illiam), *Histology, Embryology, Cytology.* Dearborn Co, Ind, 7/19/01. A.B, B.S, Cent. Mo. State Teachers Col, 29; A.M, Ph.D, Kansas, 37. Arkansas, 39-, asst. prof, 42-.

McCUNE, Robert F(ranklin), *Physics.* Muncie, Ind, 8/23/15. B.A, Manchester Col, 37; M.S, Illinois, 39, Ph.D, 41. Trinity Col. (Conn.), instr, 41-, asst. prof, 47-.

McCUSKER, P(atrick) A(loysius), *Inorganic chemistry.* Niagara Falls, N. Y, 2/3/05; m. 36, c. 4. A.B, Niagara, 26; M.S, Notre Dame, 30, Ph.D, 37. Notre Dame, 37-, assoc. prof, 43-.

McDANIEL, A(lonzo) S(impson), *Chemistry.* White Lick, Ind, 5/27/82; m. 05. A.B, Wabash Col, 04; M.A, Wisconsin, 05, Ph.D, 09. U. S. Bur. Standards, 09-13; Eastman Kodak (N. Y.), 13-18; Niagara Sprayer & Chem. Co, dir. res, 25-47.

McDANIEL, Paul W(illiam), *Nuclear physics.* Robards, Ky, 1/1/16; m. 37. B.S, West. Ky. State Teachers Col, 36; M.S, Indiana, 38, Ph.D, 41. U. S. Atomic Energy Comn, exec. off. div. res, 48-.

McDANIEL, Robert S(teptoe), *Chemical engineering.* Lynchburg, Va, 4/15/21; m. 46, c. 1. B.Ch.E, Virginia, 42; Ch.E, Princeton, 43. Standard Oil Co. Ind, 43-, group leader, 47-.

McDERMOTT, John P(atrick), *Chemistry.* Billings, Mont, 3/38/18; m. 43. B.S, Portland, 40; M.S, Notre Dame, 41, Ph.D, 44. Standard Oil Develop. Co, 43-.

McDILL, R(obert) M(cKee), *Mathematics.* Richland, Ind, 3/25/72. A.B, Indiana, 94, A.M, 98. Ind. pub. schs, 95-07; Hastings Col, prof, 19-.

McDONALD, Clinton C., *Botany, Bacteriology.* West Baden, Ind, 2/4/93; m. 17, c. 2. B.A, Indiana, 22, M.A, 24, Ph.D, 26. Indiana, instr, 22-26; Wichita, prof, 26-.

McDONALD, Francis G(uy), *Biochemistry.* Henderson, Ky, 7/9/02; m. 25, c. 2. B.S, Purdue, 24; M.S, Rutgers, 28, Ph.D, 29. Mead Johnson & Co. (Evansville), 24-, biochem, 29-.

McDONALD, W(illard) F(loyd), *Meteorology, Hydrology.* Elkhart Co, Ind, 12/11/91; m. 12, c. 3. U. S. Weather Bur: 15-, ch. marine div. (Wash, D. C.), 31-36, in chg. forecast dist. New Orleans, 36-39, asst. ch. (Wash, D. C.), 40-.

MacDOUGAL, D(aniel) T(rembly), *Botany* (starred). Liberty, Ind, 3/16/65. B.S, DePauw, 90, A.M, 93, LL.D, 10; M.S, Purdue, 91, Ph.D, 97. Purdue, instr, 90-93; Carnegie Institution, desert lab. (Ariz.), dir. bot. res, 05-28, res, assoc, 28-34. Am. Assn. Adv. Sci. (ex-v. p, gen. sec); Soc. Nat. (pres, 10).

McEACHRON, K(arl) B(oyer), *Electrical engineering.* Hoosick Falls, N. Y, 11/17/89; m. 14, c. 5. E.E, M.E, Ohio Northern, 13; M.S, E.E, Purdue, 20, D.Sc, 41. Purdue, instr, 18-22; Gen. Elec, res. eng, 33-45, mgr. eng, 45-.

McELROY, W(ilbur) R(enfrew), *Chemistry.* Fayetteville, Pa, 8/20/14; m. 39, c. 1. A.B, Gettysburg Col, 36; M.S, Pa. State Col, 38; Ph.D, Purdue, 43. Jefferson Chem. Co, proj. leader, 45-.

McEWAN, Eula Davis, *Geology.* Milford, Ill, m. 06. A.B, Indiana, 13, A.M, 14, Ph.D, 18. Nebraska, asst. prof, 22-47.

MacFALL, C(laude) M(atthews), *Anatomy.* St. Bernice, Ind, 5/23/80. A.B, Indiana, 14; Ph.D, Virginia, 26. South Dakota, prof, 33-37; Geo. Washington, prof, 39-.

MacFARLAND, F(rank) M(ace), *Histology* (starred). Centralia, Ill, 6/10/69. Ph.B, DePauw, 89; A.M, Stanford, 93; Ph.D, Wurzburg, 96. Stanford, 92-34, prof, 09-34.

MacFARLANE, John O('donnell), *Virology.* Valparaiso, Ind, 4/16/20; m. 43, c. 1. B.S, Purdue, 41; Ph.D, Cincinnati, 48. Eli Lilly & Co, bact, 48-.

MacFIE, K(enneth) W(illiam), *Chemical engineering.* N. Y. C, 10/7/21. B.Ch.E, N. Y. U, 44. Standard Oil Co. Ind. 44-, gen. foremen res. dept, 47-.

McGAUGHEY, A(lbert) Wayne, *Mathematics.* Russellville, Ind, 7/15/14; m. 41, c. 3. A.B, Wabash Col, 35; M.S, Iowa, 37; Ph.D, Cincinnati, 40. Purdue, instr, 40-41; Bradley, assoc. prof, 48-.

McGAVRAN, Edward G(rafton), *Public health.* Pochmari, India, 5/14/02; m, c. 3. A.B, Butler, 24; M.D, Harvard, 38. Washington (St. Louis), 41-46; North Carolina, dean, 47-.

McGEE, J(ohn) M(erritt), *Physical chemistry.* St. Cloud, Minn, 1/30/88; m, c. 2. A.B, Washington (Seattle), 09, M.A, 11; M.A, Columbia, 14; Ph.D, California, 19. Standard Oil Co. Ind, 25-38.

McGILL, William J(ames), *Organic chemistry.* Saginaw, Mich, 4/15/94. B.S, Michigan, 19, M.S, 20, Ph.D, 24. Standard Oil Co. Ind, 25-.

MacGILLIVRAY, John H(enry), *Olericulture.* Ithaca, N. Y, 1/27/99; m. 27, c. 4. B.S, Illinois, 21, M.S, 22; Ph.D, Wisconsin, 25. Purdue, 25-36, assoc. hort, 27-36; California, 36-, prof, 49-.

McGINNIS, C(laude) S(tonecliffe), *Physics.* Indianapolis, Ind, 10/12/81; m. 09, 43, c. 2. S.B, Mass. Inst. Tech, 06; Ph.D, Pennsylvania, 11. Temple, prof, 20-.

McGRATH, Joseph S(arto), *Inorganic chemistry.* Hubbard, Ore, 9/28/03. A.B, Notre Dame, 32, Ph.D, 39. Portland, prof, 39-, dean col. sci, 40-.

McGUIRE, Francis Thomas, *Metallurgy.* N. Y. C, 10/2/12; m. 36, c. 2. B.S, Notre Dame, 37, M.S, 38, Ph.D, 41. Deere & Co, asst. mgr. materials eng. dept, 49-.

McGUIRE, J(ames) M(yrlin), *Microbiology.* DeWitt, Nebr, 5/12/09; m. 35, c. 2. A.B, Nebr. State Teachers Col, 30; M.S, Iowa, 38, Ph.D, 40. Eli Lilly & Co, 40-.

McGUIRE, Mrs. Ruth C(olvin) Starrett. *Plant pathology.* Flora, Ind, 2/19/93; m. 25, 40. A.B, Indiana, 14, M.A, 16. U. S. Dept. Agr, 19-, assoc. cytol, 48-.

MACHEREY, Robert E(dward), *Metallurgy.* Evanston, Ill, 1/5/18; m. 42, c. 1. B.S, Purdue, 41. Argonne Natl. Lab, 47-.

McINDOO, Norman E(ugene), *Zoology, Entomology* (starred). Lyons, Ind, 4/11/81; m. 11, c. 2. A.B, Indiana, 06, A.M, 09; Ph.D, Pennsylvania, 11. U. S. Dept. Agr, sr. entom, 11-45.

McINTOSH, Arthur C(lem), *Biology.* Paoli, Ind, 1/12/01. A.B, Indiana, 21; A.M, Colorado, 23. S. Dak. Sch. Mines, 23-.

McINTOSH, George H(enry), *Analytical chemistry.* Nevada, Ia, 9/8/05. A.B, Simpson Col, 28; Ph.D, Iowa State Col, 34. Am. Maize Prods. (Roby, Ind.), in chg. control lab, 36-.

McINTOSH, William Roscoe, *Civil engineering.* Leavenworth, Ind, 9/28/01; m. 27, c. 2. B.S, Rose Poly. Inst, 25, M.S, 29, C.E, 30. Louisville, 27-, assoc. prof, 31-49, prof, 49-.

MACK, Clinton O., *Zoology.* Upland, Ind, 9/29/07. B.S, Ohio State, 28; A.M, Northwestern, 32; Ph.D, Western Reserve, 42. Wheaton Col. (Ill.), asst. prof, 43-.

MACK, David J(osef), *Metallurgy.* Madison, Wis, 12/25/09; m. 34, c. 2. B.S, Wisconsin, 31, M.S, 32; Ph.D, Purdue, 44. Purdue, 35-39, instr, 37-39; Wisconsin, 45-.

MACK, James B(ryant), *Zoology.* Wellsboro, Pa, 10/23/75. A.B, Syracuse, 01; A.M, Kansas, 14; Ph.D, Ohio State, 29. Taylor, dean, 06-10; Marion Col, prof, 20-27; Wheaton Col. (Ill.), prof, 29-.

MACK, Julian Ellis, *Physics.* La Porte, Ind, 4/26/03; m. 32, c. 2. A.B, Michigan, 24, A.M, 25, Ph.D, 28. Wisconsin, 30-, assoc. prof, 42-.

MACKAY, Elizabeth L(inn), *Botany, Cytology.* Lafayette, Ind, 1/21/12. B.S, Purdue, 33; M.A, Wisconsin, 35, Ph.D, 37. Purdue, 37-, asst. prof, 41-.

MACKELL, James F(rancis), *Physics.* Montgomery, Ind, 1/24/88; m. 16, c. 2. A.B, Ind. State Nor. Sch, 15; M.A, Minnesota, 21; Ph.D, Indiana, 32. Ind. State Teachers Col, 21-, prof, 26-. Ind. Acad. Sci. (pres, 47).

McKENNA, James F(rancis), *Chemistry.* Portland, Ore, 4/24/13; m. 40, c. 2. B.S, Notre Dame, 36, M.S, 37, Ph.D, 39. Pittsburgh Plate Glass Co, 44-.

McKENZIE, Lawson M(orell), *Physics.* Sheridan, Ind, 11/7/12; m. 41, c. 2. B.S, Geo. Washington, 34, A.M, 37. Off. Naval Res, 46-.

MACKEY, Arthur Kapp, *Animal husbandry.* Logansport, Ind, 1/29/95; m. 25, c. 2. B.S.A, Purdue, 21; M.S, Illinois, 23. A. & M. Col. (Tex.), prof, 25-40; Okla. Natl. Stock Yards Co, v. p, 45-.

McKINLEY, Clyde, *Chemistry.* Mongo, Ind, 4/19/17; m. 40, c. 2. B.S, Tri-State Col, 37; B.S, Michigan, 40, M.S, 41, Sc.D, 43. Gen. Aniline & Film Corp, chem. eng, 43-.

McKINNEY, A(sa) E(manuel), *Chemistry.* Scircleville, Ind, 1/23/87. A.B, Indiana, 14, A.M, 15; Ph.D, Cornell, 23. Hamilton Col, assoc. prof, 28-39, prof, 39-.

McKINSEY, J(ohn) C(harles) C(henoweth), *Mathematics.* Frankfort, Ind, 4/30/08; m. 40. B.S, N. Y. U, 33, M.S, 34; Ph.D, California, 36. Douglas Aircraft Co, design specialist, 47-.

MacKNIGHT, F(ranklin) C(ollester), *Paleobotany.* Louisville, Ky, 6/30/09. Ph.B, Chicago, 32, Ph.D, 38. Evansville Col, prof, 47-.

MacKUSICK, B(yron) L(eroy), *Chemical engineering.* Mishawaka, Ind, 1/14/09; m. 35, c. 3. S.B, Mass. Inst. Tech, 30, S.M, 31. Pure Oil Co, res, 36-.

MacLAREN, F(rederick) H(aviland), *Chemical engineering.* Bennington, Vt, 9/14/02; m. 29. B.Ch.E, Ohio State, 25. Standard Oil Co. Ind, chem. eng, 25-32, group leader res, 32-.

McLELLAN, Harry James, *Mechanical engineering.* Longmont, Colo, 6/25/99; m. 23, c. 3. M.E, Notre Dame, 21. Notre Dame, assoc. prof, 21-.

McMAHAN, Edwin L., *Physics.* Rochester, Ind, 9/28/94; m. 20, c. 3. B.S, Purdue, 19. Aluminum Co. Am, analyst-eng, 20-.

McMILLAN, Graham W(atson), *Chemistry.* Monmouth, Ill, 9/25/16. B.S, Monmouth Col, 37; Ph.D, Illinois, 41. Commercial Solvents Corp. (Terre Haute), res. chem, 40-.

McMILLEN, J(ames) Howard, *Physics.* Ft. Wayne, Ind, 4/24/04; m. 30, c. 2. A.B, Oberlin Col, 26; M.S, Washington (St. Louis), 28, Ph.D, 30. Naval Ordnance Lab, ch. hydrodynamics sub-div, 46-.

McMINN, H(oward) E., *Botany.* Richmond, Ind, 8/19/92; m. 16, c. 2. A.B, Earlham Col, 14; A.M, California, 16. Mills Col, prof, 18-.

McMULLEN, Lynn B(anks), *Physics, Chemistry.* Arcadia, Ind, 1/28/75; m. 99, c. 2. B.S, DePauw, 97; A.M, Columbia, 19, Ph.D, 27. Ind. high schs, 97-08; East. Mont. Nor. Sch, pres, 27-45.

McNEELY, Lowell A(mbert), *Mechanical engineering.* Boonville, Ind, 7/26/09; m. 41, c. 2. B.S, Evansville Col, 33. Servel Inc. (Evansville), 34-, eng, 38-.

McNEILL, Jerome, *Biology.* Laurel, O, 9/25/57, died, 28. B.S, Indiana, 86. Florida State, prof, 04-28.

McNINCH, Joseph Hamilton, *Medical bacteriology.* Indianapolis, Ind, 10/5/04; m, c. 1. A.B, Ohio State, 27, M.D, 30. U. S. A, Med. Corps, 31-, dir. Army Med. Lib, 46-.

McNITT, Robert J(oseph), *Electrochemistry.* Logansport, Ind, 9/16/79; m. 14, c. 4. A.B, Cornell, 02, M.E, 04. Roessler & Hasslacher Chem. Co, 07-19; cons. and electrochem. eng, 19-.

McNULTY, D(orothy Grace), *Chemistry.* Terre Haute, Ind, 6/18/18. B.A, Ohio State, 42. Battelle Mem. Inst, 42-, res. eng, 46-.

McNULTY, G(eorge) M(ervin), *Chemistry.* Tarkio, Mo, 10/4/05; m. 30, c. 1. B.A, Iowa, 27, M.S, 29, Ph.D, 30. Standard Oil Co. Ind, 30-36.

McREYNOLDS, L(indley) Ward, *Biology.* Sharpsville, Ind, 1/28/92. A.B, Defiance Col, 15; A.M, Michigan, 16. Kokomo Junior Col. (Ind.), prof. and dean, 38-45.

MacROBERTS, D(onald) T(heodore), *Petroleum engineering.* Princeton, Ind, 1/3/07; m. 35, c. 3. United Gas Corp, res. eng, 43-, dir. res, 47-.

MACY, Paul F(ranklin), *Plant chemistry.* Danville, Ill, 12/11/09. B.S, Purdue, 31; Ph.D, Cornell, 35. U. S. War Dept, Ind. Ordnance Works, asst. ch. chem, 41-.

MADDIGAN, S(tephen) E(dward), *Physics.* Winnipeg, Man, Can, 1/17/10, nat, 39; m, c. 1. B.A, British Columbia, 30; M.S, Purdue, 33, Ph.D, 36. Purdue, instr, 30-36; Chase Brass & Copper Co. (Ind.), res. phys, 36-45.

MAGEE, John L(afayette), *Physical chemistry.* Franklinton, La, 10/28/14; m. 48, c. 1. A.B, Miss. Col, 35; M.S, Vanderbilt, 36; Ph.D, Wisconsin, 39. Notre Dame, asst. prof, 48-.

MAGNANI, Arthur, *Organic chemistry.* Mark, Ill, 10/3/10; m. 38, c. 1. A.B, DePauw, 34, Ph.D, Wisconsin, 37. Glidden Co, Soya Prods. Div, res. chem, 41-.

MAGRUDER, Roy, *Horticulture.* Jeffersonville, Ind, 2/11/00; m. 25, c. 2. B.S.A, Purdue, 22; Ph.D, Cornell, 31. U. S. Dept. Agr, 31-, sr. olericult, 41-48, Agr. Res. Admin, 49-.

MAHIN, Edward G., *Chemistry, Metallurgy.* Lafayette, Ind, 8/16/76; m. 03, c. 4. B.S, Purdue, 01, M.S, 03; Ph.D, Hopkins, 08. Purdue, 03-25, assoc. prof, 08-25; Notre Dame, prof, 25-, head dept, 32-. Ind. Acad. Sci. (pres, 28).

MAHIN, W(illiam) E(dward), *Metallurgical engineering.* Baltimore, Md, 11/5/06; m. 28, c. 3. B.S, Notre Dame, 28; M.S, Carnegie Inst. Tech, 33. Westinghouse Elec, 36-46; Armour Res. Found, 46-, dir. res, 49-.

MAHONEY, J(erry) J(oseph), *Physics.* Seelyville, Ind, 12/10/98. A.B, Ind. State Teachers Col, 22; A.M, California, 26, Ph.D, 28. Loyola (Ill.), asst. prof. math, 32-.

MAHONEY, John J(oseph), *Endocrinology.* Boone, Ia, 11/19/16; m. 41, c. 2. B.A, Iowa, 37, M.S, 39, Ph.D, 41. Indiana, asst. prof. endocrine res, 47-.

MAINS, E(dwin) B(utterworth), *Botany* (starred). Coldwater, Mich, 3/31/90; m. 17. A.B, Michigan, 13, Ph.D, 16. Purdue, exp. sta, 16-, assoc. bot, 17-30, assoc. prof, 25-30; Michigan, prof, 30-. Mycol. Soc. (pres, 42).

MAJOR, David R., *Psychology.* Frankfort, Ind, 3/26/66, died, 36; m. 01, c. 2. B.S, Wabash, 90; Ph.D, Cornell, 96. Ind. high sch, prin, 90-98; Ohio State, prof, 01-14; Indiana, prof, 21-36.

MALLATT, Russell C(layton), *Chemistry.* Sheldon, Ill, 9/15/17; m. 41, c. 2. B.S, Illinois, 39; M.S, Rochester, 41. Standard Oil Co. Ind, asst. ch. chem, 48-.

MALLETT, Donald Roger, *Psychology.* Guthrie Center, Ia, 7/23/10; m. 36, c. 3. B.A, Drake, 31; M.A, Iowa, 34, Ph.D, 36. Purdue, asst. dir. student affairs, 45-.

MALLON, Marguerite G(enevieve), *Nutrition.* Bloomington, Ill, 1/1/93. B.S, Ill. Inst, Tech, 15; M.S, Chicago, 16, Ph.D, 26. Purdue, 18-36, assoc. prof, 34-36; California L. A, assoc. prof, 36-.

MALLORY, Donald D(ean), *Mechanical engineering.* Cuyahoga Falls, O, 5/29/06; m. 28, c. 2. B.S, Valparaiso, 28; M.S, Michigan, 35. McGill Mfg. Co. (Ind.), 27-30; Valparaiso, 30-, prof, 41-42; Toledo Scale Co, dir. eng, 45-.

MALONEY, A(rnold) H(amilton), *Pharmacology.* San Fernando, Trinidad, B.W.I, 7/4/88. A.B, Columbia, 10; M.D, Indiana, 29; Ph.D, Wisconsin, 31. Howard, prof, 31-.

MALOTT, Clyde Arnett, *Geology.* Atlanta, Ind, 9/10/87, died, 50; m. 11, c. 3. A.B, Indiana, 31, A.M, 15, Ph.D, 19. Indiana, 16-47, prof, 24-47. Ind. Acad. Sci. (pres, 44). Indiana caverns and associated features; Indiana stratigraphy.

MANCE G(rover) C(leveland), *Geology.* Pine Bush, N. Y, 2/5/86. B.S, Colgate, 06; A.M, Indiana, 14, Ph.D, 15. Rochester Col. (Ind.), prof, 06-08; St. Lawrence, prof, 16-22; Winthrop Col, 22-34; cons. geol, 34-.

MANCHESTER, J(ames) E(ugene), *Mathematics.* Pitcairn, N. Y, 8/16/55, died, 13. B.S, Minnesota, 84; Sc.D, Tubingen, 99. Vincennes, prof, 99-04, pres, 01-04; Minnesota, instr, 04-13.

MANGEL, Margaret (Wilson), *Foods and nutrition.* Tell City, Ind, 5/13/12. A.B, Indiana, 32; M.S, Chicago, 40. Ind. high sch, 34-39; Missouri, 40-, assoc. prof, 49-.

MANN, Frank C(harles), *Physiology* (starred), *Surgery.* Decatur, Ind, 9/11/87; m. 14, c. 3. A.B, Indiana, 11, M.D, 13, A.M, 14, LL.D, 38. Mayo Clinic, 14-17, 21-; Minnesota, Mayo Found, 17-, prof, 21-. Physiol. Soc. (pres, 35-37); Natl. Acad. Sci. Experimental surgery, physiology and pathology.

MANUEL, Herschel T(hurman), *Educational psychology.* Freetown, Ind, 12/24/87; m. 28, c. 3. A.B, DePauw, 09; A.M, Chicago, 14; Ph.D, Illinois, 17. Texas, 25-, prof, 27-.

MANUEL, W(illiam) A(sbury), *Chemistry.* Freetown, Ind, 1/18/91; m. 19, c. 2. A.B, DePauw, 12, M.S, Illinois, 15; D.Sc, Colo. Sch. Mines, 28. Ohio Wesleyan, prof, 29-.

MANWARING, Wilfred H(amilton), *Experimental pathology* (starred). Ashland, Va, 9/14/71. B.S, Michigan, 95; M.D, Hopkins, 04. Indiana, assoc. prof, 05-07; Stanford, prof, 13-37.

MAPLE, Clair G(eorge), *Mathematics.* Glenwood, Ind, 3/17/16; m. A.B, Earlham Col, 39; M.A, Cincinnati, 40; D.Sc, Carnegie Inst. Tech, 48. Iowa State Col, assoc. prof, 49-.

MARBLE, Richmond, *Poultry husbandry.* West Bloomfield, N. Y, 9/27/02; m. 28, c. 3. B.S, Cornell, 26, M.S, 28, Ph.D, 30. Pa. State Col, 30-44, prof, 39-44; Creighton Bros. (Warsaw, Ind.), poultry genet, 44-.

MARCY, Lawson F(rancis), *Chemistry.* Mandan, N. Dak, 1/29/02; m. 24. A.B, Evansville Col, 24; A.M, Columbia, 26; Ph.D, Ohio State, 43. N. Dak. Col, 31-36; Pa. State Col, 37-44; East. Ill. State Col, assoc. prof, 44-.

MARKLE, M(illard) S., *Botany.* Hagerstown, Ind, 11/26/83; m. 11. B.S, Earlham Col, 10; M.S, Chicago, 13, Ph.D, 15. Ind. high schs, 02-09; Earlham Col, 10-, prof, 15-. Ind. Acad. Sci. (pres, 46); Ind. Audubon Soc. (pres, 42). Plant ecology, peat bogs.

MARKUNAS, P(eter) C(harles), *Analytical chemistry.* Chicago, Ill, 11/5/11; m. 41, c. 3. B.S, Shurtleff Col, 34; M.S, Illinois, 37, Ph.D, 40. Commercial Solvents Corp. (Terre Haute), res. chem, 41-.

MARLOW, Wayland C(linton), Jr, *Physics.* Licking, O, 3/16/08; m. 31, c. 4. B.S, Denison, 30; M.S, Michigan, 32. Delco Radio Div. (Ind.), sr. radio eng, 36-41; Owens-Corning Fiberglas Corp, ch. phys, 45-.

MARLOWE, Elbert W(infield), *Circuitry.* Lawrenceburg, Ind, 8/26/12. B.S, Chicago, 34. Union Switch & Signal Co, staff eng, 45-.

MARQUIS, J(ohn) Clyde, *Agricultural economics.* Madison, Ind, 7/9/81; m. 04, 38, c. 2. B.S.A, Purdue, 04, M.S.A, 09, hon.D.Agr, 42. U. S. Dept. Agr, 22-35; Am. dele, Int. Inst. Agr. (Rome), 35-41.

MARRIOTT, Ross W., *Mathematics, Astronomy.* Paxton, Ill, 12/30/82; m. 15, c. 1. B.A, Indiana, 06; M.A, Swarthmore Col, 07; Ph.D. (physics), Pennsylvania, 11. Swarthmore Col, 07-, prof, 27-.

MARSCHNER, Robert F(rederic), *Organic chemistry.* Wilkinsburg, Pa, 8/17/08; m. 34, c. 2. Ph.B, Brown, 28; S.M, 29; Ph.D, Pa. State Col, 36. Standard Oil Co. Ind, 34-, group leader res, 43-46, sect. leader, 46-.

MARSH, David Fielding, *Pharmacology, Organic chemistry.* Kokomo, Ind, 6/8/19; m. 41, c. 2. A.B, West Virginia, 39; M.S, Purdue, 40; Ph.D, California, 42. West Virginia, 44-, prof, 47-.

MARSH, Homer F(loyd), *Bacteriology.* Terre Haute, Ind, 2/26/09; m. 30, c. 1. B.S, Ind. State Teachers Col, 30; M.S, Purdue, 32; Ph.D, Ohio State, 41. Oklahoma, 41-, prof, 48-.

MARSH, Ray Stanley, *Pomology.* Paragon, Ind, 12/17/94; m. 17, c. 1. B.S.A, Missouri, 21, A.M, 22. Illinois, from asst. to assoc. prof. hort, 25-36; West Virginia, prof, 36-.

MARSHALL, E(ugene) D(uncan), *Forestry.* Hoopeston, Ill, 12/10/10; m. 36, c. 3. B.S.F, Purdue, 34; M.S.F, California, 38. U. S. Forest Serv, 38-41; A. & M. Col. (Tex.), dir. forest prods. lab, 43-.

MARSHALL, Frederick J., *Organic chemistry.* Detroit, Mich, 8/14/20; m. 46, c. 1. B.S, Detroit, 41, M.S, 42; Ph.D, Iowa State Col, 48. Eli Lilly & Co, 48-.

MARSHALL, G(eorge) Edw(ard), *Entomology.* Bonner Springs, Kans, 9/3/04; m. 41, c. 3. B.S, Kans. State Col, 28, M.S, 29; Ph.D, Ohio State, 41. Purdue, exp. sta, from asst. to assoc. entom, 39-.

MARSHALL, Ogden E(llsworth), *Chemistry.* North Madison, Ind, 3/25/11; m. 40, c. 2. B.S, Purdue, 32; M.S, N. Y. U, 43. Standard Brands, Inc, 38-.

MARSHALL, Roland Bartel, *Instrumentation.* Richmond, Ind, 2/3/00; m. 24, c. 3. B.S, Purdue, 23, M.S, 41. Purdue, prof. elec. measurements, 34-.

MARSHALL, William, *Mathematics.* Southfield, Mich, 4/5/69. B.S, Michigan, 97, M.S, 98; Ph.D, Zurich, 08. Purdue, 08-41, prof, 17-41, head dept, 21-41.

MARSTERS, V(ernon) F(reeman), *Geology.* B.A, Acadia Col, 86; A.M, Harvard, 98. Indiana, prof, 91-03; Repub. of Peru, geol, 05-11; cons. geol, 17-41.

MARTELL, E(ldred) R(oland), *Forestry.* Romeo, Mich, 9/4/01; m. 25. B.S, Michigan, 25, M.S, 26, Ph.D, 32. Purdue, prof, 40-.

MARTENS, J(acob) Louis, *Plant morphology.* Anchor, Ill, 4/18/09; m. 39, c. 1. A.B, Ind. Cent. Col, 30; A.M, Indiana, 32, Ph.D, 38. Piedmont Col, 40-47; Ill. State Nor, assoc. prof, 47-.

MARTIN, Alonzo W(ilbur), *Physical chemistry.* Washington Co, Ind, 4/26/00; m. 25. B.S, Idaho, 22, M.S, 29; Ph.D, Washington (Seattle), 40. Monsanto Chem. Co, sr. res. chem, 46-.

MARTIN, Clare S., *Chemistry.* Loogootee, Ind, 88; m. 13, c. 1. B.S, Ohio State, 11, M.S, 20, Ph.D, 23. Bowling Green State (O.), prof, 23-.

MARTIN, Daniel W(illiam), *Physics.* Georgetown, Ky, 11/18/18; m. 41, c. 3. A.B, Georgetown Col, 37; M.S, Illinois, 39, Ph.D, 41. Purdue, instr, 41-46.

MARTIN, Don S(tanley), Jr, *Chemistry.* Indianapolis, Ind, 2/19/19. B.S, Purdue, 39; Ph.D, Calif. Inst. Tech, 44. Iowa State Col, 46-, assoc. prof, 47-.

MARTIN, Ernest Lynne, *Chemistry.* Bottineau, N. Dak, 1/25/09; m. 29, c. 1. B.S, N. Mex. State Teachers Col, 28; M.A, Indiana, 30, Ph.D, 46. N. Mex. State Teachers Col, asst. prof, 33-43; New Mexico, 43-.

MARTIN, F(rank) D(ayton), *Chemistry.* South Bend, Ind, 5/4/01; m. 25. B.S, Purdue, 23, M.S, 25, Ph.D, 31. Purdue, 25-, prof, 42-.

MARTIN, F(rank) S(tephen), *Chemistry.* Salem, Ind, 10/8/10; m. 37, c. 2. B.S, Kans. State Col, 33; Ph.D, Iowa State Col, 38. U. S. Rubber Co, develop. chem, 39-.

MARTIN, Geo(rge) W., *Biology.* Lagro, Ind, 1/23/63, died, 39. B.S, Wabash Col, 87; Ph.D, Indiana, 92. Prin, Ind. high schs, 87-99; Vanderbilt, 99-39; state entom, Tenn, 01-39.

MARTIN, Gordon M(orehouse), *Physics.* South Bend, Ind, 10/17/16; m. 45, c. 2. B.S, Purdue, 38; M.S, Idaho, 39. U. S. Bur. Standards, 40-42; Manhattan Proj. (Los Alamos), 44-46; Alfred, assoc. prof, 47-.

MARTIN, Hugh E(llis), *Pharmacology.* Shelburn, Ind, 3/22/02. A.B, Indiana, 28, A.M, 30, M.D, 34. Indiana, 29-42, pharmacol, 38-40, asst. prof, 40-42; Pitman-Moore Co. (Indianapolis), dir. pharmacol. res, 42-.

MARTIN, Jerome, *Chemistry.* Bisbee, Ariz, 1/12/02; m. 28, c. 2. B.S, Colorado, 24; Ph.D, California, 28. Commercial Solvents Corp. (Terre Haute), 27-, res. dir, 39-.

MARTIN, J(ohn) N(athan), *Botany.* Bowling Green, Ind, 75. A.B, Indiana, 07; Ph.D, Chicago, 13. Manchester Col, 07-09; Iowa State Col, prof, 11-.

MARTIN, J(oseph) Holmes, *Genetics.* Chicago, Ill, 6/25/95; m. 17, c. 1. B.S, Purdue, 17; M.S, Kentucky, 24; Ph.D, Wisconsin, 29. Kentucky, 20-38, prof, 26-38; Purdue, exp. sta, prof. poultry and head dept, 40-.

MARTIN, Lillien J(ane), *Psychology* (starred). Olean, N. Y, 51, died, 43. A.B, Vassar Col, 80. Teacher sci, Indianapolis high schs, 80-89; Stanford, asst. prof. to prof, 99-16; cons, 16-43.

MARTIN, R(obert) Earl, *Physics.* Monroe Co, Ind, 8/18/94; m. 18, c. 1. A.B, Indiana, 17, Ph.D, 25; B.S, Lehigh, 21. Ind. pub. schs, 12-15, high schs, 15-16; Hanover Col, prof, 29-.

MARTIN, Robert W(illiam), *Chemistry.* Kendallville, Ind, 1/16/16; m. 38, c. 2. B.S, Bethany Col, 40; M.S, Utah State Agr. Col, 42. Gen. Elec, 42-.

MARTIN, Walter Edwin, *Parasitology, Zoology.* De Kalb, Ill, 1/14/08; m. 34, c. 4. B.Ed, Northern Ill. State Teachers Col, 30; M.S, Purdue, 32, Ph.D, 37. Purdue, instr, 34-37; DePauw, 37-47, prof, 46-47; South. California, 47-, prof, 48-.

MARTIN, Willard Hungate, *Dairy husbandry.* Salem, Ind, 6/28/94; m. 25, c. 2. B.S, Purdue, 18; M.S, Pa. State Col, 22. Kans. State Col, 25-, prof, 28-.

MASON, Brian H(arold), *Mineralogy.* Port Chalmers, New Zealand, 4/18/17; m. 43. M.Sc, New Zealand, 38; Ph.D, Stockholm, 43. New Zealand, sr. lect, 44-47; Indiana, assoc. prof, 47-.

MASON, P(reston) W(alter), *Entomology.* Warren, Mich, 4/12/89. B.S, Mich. State Col, 12; M.S, Purdue, 17; Ph.D, Geo. Washington, 25. Purdue, asst. prof, 17-18; U. S. Dept. Agr, Bur. Entom. and Plant Quarantine, 18-.

MASON, Tho(ma)s E(dward), *Mathematics.* Boone Grove, Ind, 10/1/83, died, 39. A.B, Indiana, 05, A.M, 12, Ph.D, 14. Purdue, assoc. prof, 14-39.

MASON, William Allen, *Chemical engineering.* Ft. Wayne, Ind, 3/22/07; m. 35, c. 2. B.S, Purdue, 30. Dow Chem. Co, chem. eng, 41-.

MASSENGALE, O(liver), *Chemistry.* Deatsville, Ala, 1/12/98. B.S, Ala. Poly. Inst, 18; M.S, Iowa State Col, 24; Ph.D, Rutgers, 28. Mead Johnson & Co, res. chem, 29-.

MASSEY, L(ouis) M(elville), *Plant pathology.* West Point, Ia, 8/25/90; m. 21, c. 2. A.B, Wabash Col, 12; Ph.D, Cornell, 16. Cornell, 14-, asst. prof, 16-22, prof, 22-.

MASTIN, T(homas) W(illiam), *Organic chemistry.* New Castle, Ind, 12/19/13; m. 38, c. 3. A.B, Wabash Col, 38; M.S, Ph.D, Illinois, 42. Lubrizol Corp, dir. chem. lab, 44-.

MATCHETT, John Rush, *Organic chemistry.* Pierceton, Ind, 8/26/04; m. 31, c. 2. B.S, Earlham Col, 25; M.S, Purdue, 27; Ph.D, Chicago, 31. U. S. Dept. Agr, 41-.

MATHER, Robert E(ugene), *Dairy science.* Goigoi, Mission Sta, Portuguese E. Africa, 11/12/18; m. 43, c. 2. B.S, Purdue, 39; M.S, Maryland, 41; Ph.D, Wisconsin, 46. Rutgers, assoc. prof, 48-.

MATHERS, Frank C(urry), *Chemistry.* Bloomington, Ind, 2/11/81; m. 11, c. 1. A.B, Indiana, 03, A.M, 05; Ph.D, Cornell, 07. Indiana, 03-50, assoc. prof, 13-23, prof, 23-50.

MATHIAS, Harry R(oy), *Mathematics.* Rochester, Ind, 1/25/01; m. 23, c. 2. A.B, Ind. Cent. Col, 23; A.M, Indiana, 25. Ind. Cent. Col, prof, 25-31; Bowling Green State, 31-, assoc. prof, 47-.

MATTANO, Leonard A(ugust), *Organic chemistry.* Tampa, Fla, 7/8/17; m. 41, c. 2. B.S, Wisconsin, 41; Ph.D, Mich. State Col, 48. Standard Oil Co. Ind, 48-.

MATTHEWS, Lewis G(eorge), *Chemical engineering.* Chicago, Ill, 9/23/14; m. 43. B.S, Purdue, 35. Prest-O-Lite Battery Co. (Indianapolis), res. eng, 35-42, asst. supt. acetylene res. div, 42-45.

MAVEETY, D(onald) J(ohn), *Chemistry.* Hillsdale, Mich, 8/23/94. B.S, Purdue, 17, Chem.E, 22. Natl. Biscuit Co, ch. chem, 19-.

MAVES, Vivien Wallace, *Educational psychology.* West Salem, Ill, 2/12/04; m. 44. A.B, Greenville Col, 28; A.M, Michigan, 32; Ph.D, Peabody Col, 40. Evansville Col, assoc. prof, 46-.

MAVITY, Julian M(aris), *Organic chemistry.* Paoli, Ind, 9/27/08; m. 33, c. 1. A.B, Earlham Col, 28; M.A, Ohio State, 30, Ph.D, 31. Universal Oil Prods. Co, 31-.

MAXWELL, Harold Lee, *Chemistry.* Cottage Hill, Ia, 2/3/92; m. 18, c. 1. B.S, Cornell Col, 16, A.M, 17; Ph.D, Iowa State Col, 24. Purdue, assoc. prof, 26-30; Dupont Co, 30-, ch. metal, 33-46.

MAXWELL, John C(rawford), *Geology.* Xenia, O, 12/28/14; m. 39, c. 1. B.A, DePauw, 36; M.A, Minnesota, 37; Ph.D, Princeton, 46. Princeton, 46-, asst. prof, 47-.

MAXWELL, Roy D(onald), *Chemistry.* Oklahoma City, Okla, 12/19/07. A.B, Okla. City, 30; M.S, Iowa, 31, Ph.D, 33. Ball State Teachers Col, asst. prof, 38-.

MAY, Clarence Earl, *Chemistry.* Bloomington, Ind, 3/3/84; m. 14, c. 3. A.B, Indiana, 04, A.M, 05; Ph.D, Columbia, 08. Indiana, 05-, prof, 26-.

MAYHEW, Raymond Lemuel, *Organic chemistry.* Colchester, Ill, 4/2/15; m. 43, c. 2. A.B, Greenville Col, 37; M.S, Illinois, 41; Ph.D, Purdue, 44. Gen. Aniline & Film Corp, res. chem, 44-.

MAYNARD, Wayne E(ldon), *Chemistry.* Emison, Ind, 10/8/18; m. 41, c. 2. B.S, Purdue, 40; M.S, N. Y. U, 44. Standard Brands, Inc, Fleischmann Labs, 40-.

MAYROSE, Herman E(verett), *Mechanical engineering.* Terre Haute, Ind, 2/18/93; m. 19. B.S, Rose Poly. Inst, 15, M.E, 35; M.S.E, Michigan, 32. Detroit, prof, 21-.

MEAD, Cyrus D(eWitt), *Education.* Spencer, Ind, 11/4/75, died, 50. Ph.B, DePauw, 98; A.M, Columbia, 12, Ph.D, 14. Ind. Sch. Feeble-Minded Youth, prin, 04-10; California, assoc. prof, 18-.

MEAD, Darwin J(ames), *Chemistry.* Dowagiac, Mich, 6/27/10; m. 36, c. 3. A.B, Kalamazoo Col, 32; Sc.M, Brown, 33, Ph.D, 36. Notre Dame, assoc. prof, 46-.

MEAD, Elwood, *Irrigation engineering.* Patriot, Ind, 1/16/58, died, 36. B.S, Purdue, 82, M.S, 84, hon. D.Eng, 04; C.E, Iowa State, 83. California, prof, 15-36; U. S. Com. Reclamation, 24-36. A famous dam builder.

MEAHL, Robert P(eter), *Horticulture.* Vallonia, Ind, 11/18/06; m. 30, c. 3. B.S, Purdue, 29, M.S, 31. Pa. State Col, 31-, prof, 48-.

MEANS, Karl S(tone), *Chemistry.* Morristown, Ind, 1/2/92; m. 17, c. 1. B.A, Butler, 14; M.A, Indiana, 15; Ph.D, Chicago, 24. Butler, 17-, prof, 39-.

MEARS, J(ames) Ewing, *Anatomy, Surgery.* Indianapolis, Ind, 10/17/38, died, 19. A.B, B.S, Trinity Col. (Conn.), 58, A.M, 61; M.D, Jefferson Med. Col, 65. Pa. Col. Dental Surg, prof, 70-98.

MEDCALF, E(ugene) C(lifton), *Chemistry.* Dale, Ind, 11/17/08; m. 35, c. 2. A.B, Indiana, 31, M.A, 32. Calco Chem. Co. (N. J.), 33-.

MEEHAN, William F(rancis), *Chemical engineering.* Loveland, Colo, 9/6/19; m. B.Ch.E, Detroit, 42. Standard Oil Co. Ind, asst. supt. tech. serv, 42-.

MEEK, S(eth) E(ugene), *Ichthyology, Herpetology.* Hicksville, O, 4/1/59, died, 14. B.S, Indiana, 84, A.M, 86, Ph.D, 91. Field Museum Nat. Hist, curator, 97-14.

MEEK, Ward B(enjamin), *Geology.* Danville, Ind, 12/9/10; m. 46. A.B, Wisconsin, 34, M.A, 35, Ph.D, 47. Oklahoma, asst. prof, 37-.

MEEKS, Robert C(ecil), *Analytical chemistry.* Anderson, S. C, 12/12/14; m. 41. B.S, South Carolina, 36. Notre Dame, bact. labs, res. chem, 47-.

MEES, C(arl) L(eo), *Physics.* Columbus, O, 5/20/53, died, 32. M.D, Starling Med. Col, 74; Ph.D, Rose Poly. Inst, 92. Ohio State, prof, 81-87; Rose, 87-20, pres, 95-20. Ind. Acad. Sci. (pres, 04); Am. Assn. Adv. Sci. (v. p, 96).

MEHLENBACHER, V(irgil) C(laude), *Chemistry.* Kensington, Minn, 3/31/01; m. 29, c. 2. B.S, Tri-State Col, 26; M.S, South. California, 36. Swift & Co, 26-, res. chem, 26-42, ch. chem, 48-.

MEHLIG, J(oseph) P(arke), *Analytical chemistry.* Tipton, Ind, 6/26/85; m. 33. B.S, Purdue, 08, M.S, 10, Ph.D, 31. Ore. State Col, 20-, prof, 47-.

MEHRLICH, F(erdinand) P(aul), *Plant pathology, Physiology.* Cincinnati, O, 05; m. 33, c. 2. A.B, Butler, 27; Ph.D, Wisconsin, 30. Hawaiian Pineapple Co, 35-, dir. res, 43-.

MEIER, Henry F(rederick) A(ugust), *Botany.* Edwardsport, Ind, 1/7/81. A.B, Indiana, 12, A.M, 13; Ph.D, Columbia, 20. Syracuse, prof, 12-.

MEIKLE, G(eorge) Stanley, *Engineering.* Milton Mills, N. H, 5/30/86. Worcester Poly. Inst, 06-09; B.E, M.C.S, Union Col. (N. Y.), 13. Purdue Res. Found, res. dir, 30-.

MEIKS, Lyman Thompson, *Pediatrics.* Shelbyville, Ind, 10/22/02; m. 31, c. 1. A.B, DePauw, 23; M.D, Hopkins, 27. Indiana, sch. med, 31-, prof, 48-.

MEISSNER, K(arl) W(ilhelm), *Physics.* Reutlingen, Germany, 12/15/91, nat, 43; m. 42. Dr.Rer.Nat, Teubingen, 15. Purdue, 41-, prof, 43-.

MEITNER, John George, *Organic chemistry.* Vienna, Austria, 4/11/18, nat, 43; m. Ph.D, Purdue, 46. Dupont Co, 46-.

MELAVEN, Ralph Michael, *Physical chemistry.* Rapid City, S. Dak, 12/8/05; m. 31, c. 2. B.S, S. Dak. Sch. Mines, 28; M.S, Ohio State, 30, Ph.D, 31. Standard Oil Co. Ind, 34-.

MELLON, M(elvin) G(uy), *Chemistry.* Conneaut Lake, Pa, 10/25/93; m. 19, c. 1. B.S, Allegheny Col, 15; M.S, Ohio State, 17, Ph.D, 19. Purdue, 19-, prof, 31-. Ind. Acad. Sci. (pres, 42).

MENCH, J(ohn) Warren, *Organic chemistry.* Chicago, Ill, 5/13/16; m. 41, c. 1. B.S, Antioch Col, 39; M.S, Purdue, 42, Ph.D, 44. Eastman Kodak, 35-, res. chem, 44-.

MENDENHALL, Thomas Corwin, *Physics* (starred). Hanoverton, O, 10/4/41, died, 24. Pub. sch. educ; hon. Ph.D, Ohio State, 78; Sc.D, Rose Poly. Inst; LL.D, Michigan, 87. Ohio State, prof, 73-78, 81-84; Rose, pres, 86-89; U. S. Coast Geodetic Surv, supt, 89-94. Ind. Acad. Sci. (pres, 90); Am. Assn. Adv. Sci. (pres, 89); Natl. Acad. Sci.

MENDENHALL, W(illiam) O(rville), *Mathematics.* Ridge Farm, Ill, 5/10/79. A.B, Penn Col. (Ia.), 00; A.B, Haverford Col, 01; Ph.D, Michigan, 11. Earlham Col, prof, 07-18; Friends, pres, 18-34; Whittier Col, pres, 34-.

MENGE, Walter O(tto), *Mathematics.* Buffalo, N. Y, 9/11/04; m. 27, c. 2. A.B, Michigan, 25, A.M, 26, Ph.D, 31. Lincoln Natl. Life Ins. Co. (Ft. Wayne), assoc. actuary, 37-43.

MENGER, Karl, *Mathematics* (starred). Vienna, Austria, 1/13/02, nat, 43; m. 34, c. 4. Ph.D, Vienna, 24. Notre Dame, prof, 37-46; Ill. Inst. Tech, 46-.

MERICA, Paul D(yer), *Metallurgy.* Warsaw, Ind, 3/17/89; m. 17. A.B, DePauw, Wisconsin, 08; Ph.D, Berlin, 14. U. S. Bur. Standards, 14-19; Int. Nickel Co, 19-49, dir. res, 22-28, v. p. and dir, 36-49. James Douglas Medal, 29; John Fritz Medal, 38; Inst. Metals Gt. Britain, Medal, 40; Franklin Inst. Medal, 42.

MERRIMAN, Curtis, *Psychology.* Warren, Ind, 3/7/75; m. 03, c. 1. A.B, Indiana, 02; A.M, Columbia, 16; Ph.D, Stanford, 22. Prin, Ind. high schs, 02-08; Wisconsin, prof, 23-45.

MERRITT, Ernest (George), *Physics* (starred). Indianapolis, Ind, 4/28/65, died, 48. M.E, Cornell, 86. Cornell, 89-48, prof, 03-35, emer, 35-48, dean grad. sch, 09-14. Natl. Acad. Sci.

MERRITT, George E(rnest), *Physics.* Indianapolis, Ind, 6/23/90; m. A.B, Pomona Col, 13. U. S. Bur. Standards, 21-33; Bendix Aviation Corp. (South Bend), 37-47.

MERRITT, Lynne L(ionel), *Analytical chemistry.* Alba, Pa, 9/10/15; m. 37, c. 3. B.S, Wayne, 36, M.S, 37; Ph.D, Michigan, 40. Indiana, 42-, assoc. prof, 47-.

MERTZ, E(dwin) T(heodore), *Chemistry.* Missoula, Mont, 12/6/09; m. 36, c. 2. A.B, Montana, 31; M.S, Illinois, 33, Ph.D, 35. Purdue, asst. prof, 46-.

MERTZ, H(enry) O(liver), *Medicine.* Roundhead, O, 4/5/84; m. 12, c. 3. M.D, Indiana, 08. Indiana, 29-, prof. and head dept. genito-urinary diseases, 36-.

MESSERSMITH, Charles W(illiam), *Mechanical engineering.* Indianapolis, Ind, 7/26/02; m. 34, c. 2. B.S, Purdue, 27, M.S, 36. Purdue, 29-, assoc. prof, 40-.

MESSICK, C(harles) A(rthur), *Mathematics.* Wilson, Kans, 1/7/96. B.S, Kans. State Teachers Col, 18; A.M, Kansas, 25; Ph.D, Chicago, 30. Oakland City Col, prof, 38-.

METZ, Charles F(ranklin), *Physical chemistry.* Deerfield, Ind, 9/23/04; m. 27, c. 1. B.S, S. Dak. Sch. Mines, 26; M.S, Colorado, 28, Ph.D, 36. Los Alamos Sci. Lab, 44-.

METZGER, William Irwin, *Bacteriology.* Peekskill, N. Y, 10/29/15; m. 41, c. 1. B.S, Purdue, 37, M.S, 39; Ph.D, Illinois, 46. Am. Cyanamid Co, Lederle Labs. Div, res, 46-.

METZNER, Wendell Phillip, *Chemistry.* Bryant, Ind, 2/16/12; m. 35, c. 2. A.B, Indiana, 33; Ph.D, Chicago, 37. Monsanto Chem. Co, 37-, assoc. dir. res, 47-.

MEUNIER, Alfred C(harles), *Organic chemistry.* Indianapolis, Ind, 6/5/15. B.S, Butler, 36; M.S, Pa. State Col, 39, Ph.D, 41. Am. Cyanamid Co, res. chem, 41-.

MEUNIER, Vincent, *Chemistry.* Indianapolis, Ind, 6/29/12; m. 39, c. 2. B.S, Butler, 34; Ph.D, Pa. State Col, 40. Rohm & Haas Co, group leader, 43-.

MEYER, Alfred H(erman), *Geography.* Venedy, Ill, 2/27/93; m. 26, c. 1. A.B, Illinois, 21, A.M, 23; Ph.D, Michigan, 33. Valparaiso, prof, 26-. Area studies of northwest Indiana.

MEYER, Helen Unger, *Genetics.* Berlin, Germany, 5/4/08, nat, 45; m. 38, c. 1. Ph.D, Berlin, 36. Indiana, res. assoc, 47-.

MEYER, Herbert A(lbert), *Mathematics.* Lamont, Ia, 11/4/05; m. 28, c. 3. B.S, Des Moines, 26; M.S, Iowa, 27, Ph.D, 29. Hanover Col, prof, 29-43; Indiana, 43-46; Florida, 46-.

MICELI, A(ngelo) S(ylvestro), *Chemical engineering*. N. Y. C, 12/24/13; m. 38, c. 4. B.S, Wayne, 34, M.S, 36; Ph.D, Michigan, 42. U. S. Rubber Co, sr. sci, 42-48, head chem. res. Ft. Wayne, 48-.

MICHAEL, Lyle J(ordan), *Inorganic chemistry*. Phillips, Wis, 2/1/95; m. 21. B.Sc, Otterbein Col, 19; M.Sc, Ohio State, 20, Ph.D, 29. Ind. Cent. Col, prof, 21-37; Otterbein Col, prof, 37-.

MICHEL, Bede E(ugene), *Chemistry*. St. Paul, Minn, 3/21/09. B.A, St. John's U, 31; Ph.D, Notre Dame, 39. St. John's 39-, assoc. prof, 46-.

MICHEL, Lester Allen, *Chemistry*. Mexico, Ind, 3/5/19; m. 42, c. 2. A.B, Taylor, 41; M.S, Purdue, 44; Ph.D, Colorado, 47. Colo. Col, 47-, asst. prof, 48-.

MIDDLETON, A(rthur) E(verts), *Physics*. Erie, Pa, 6/10/19; m. 41, c. 2. B.S, Westminster Col, 40; M.S, Purdue, 42, Ph.D, 44. Batelle Mem. Inst, 45-, asst. super. res, 47-.

MIDDLETON, A(rthur) R(enwick), *Chemistry*. Webster, N. Y, 5/8/69, died, 44. A.B, Rochester, 91; Ph.D, Cornell, 04. Purdue, 06-39, prof, 18-39.

MIDDLETON, Warren C(andler), *Psychology*. Mokane, Mo, 3/13/01; m. 34, c. 1. A.B, Cent. Col. (Mo.), 23; A.M, Vanderbilt, 24; Ph.D, Yale, 29. DePauw, 29-, prof, 36-.

MIESSNER, B(enjamin) F(ranklin), *Electroacoustics*. Huntingburg, Ind, 7/27/90; m. 16, c. 2. Purdue, 13-16; Miessner Inventions, Inc, pres, 30-.

MILES, C(harles) Burke, *Chemistry*. Salt Lake City, Ut, 1/2/15; m. 36, c. 2. B.A, Utah, 35; Ph.D, Purdue, 40. Westvaco Chlorine Prods. Corp, tech. dir, 46-.

MILES, E(gbert) J., *Mathematics*. Bethlehem, Ind, 1/9/86; m. 12, c. 3. A.B, Indiana, 06; A.M, Swarthmore Col, 07; Ph.D, Chicago, 10. Yale, 11-, assoc. prof, 25-.

MILES, S(amuel) R(aymond), *Agronomy, Statistics*. Bogota, Colombia, S. A, 2/16/95; m. 18, c. 2. B.S.A, Purdue, 17, M.S, 31. Purdue, agron, 27-45, statist. and agron, 45-.

MILES, Walter R(ichard), *Psychology* (starred). Silverleaf, N. Dak, 3/29/85; m. 08, 27, c. 4. B.S, Pacific Col, 06; A.B, Earlham Col, 08; M.A, Iowa, 10, Ph.D, 13. Stanford, prof, 22-32; Yale, prof, 31-. Natl. Acad. Sci.

MILGRAM, A(rthur) N(orton), *Mathematics*. Philadelphia, Pa, 6/3/12; m. 34, c. 2. A.B, Temple, 33; Ph.D, Pennsylvania, 37. Notre Dame, 37-46, assoc. prof, 43-46; Syracuse, assoc. prof, 47-.

MILLER, Arild J(ustesen), *Chemistry*. Pine City, Minn, 5/16/18; m. 43, c. 2. B.A, Carleton Col, 39; Ph.D, Purdue, 43. Chas. F. Kettering Found, 46-49; Carleton Col, assoc. prof, 49-.

MILLER, Clarke C(ordis), *Chemical engineering*. Racine, Wis, 6/22/00; m. 32, c. 3. B.S, Mass. Inst. Tech, 23. Standard Oil Co. Ind, 24-45, dir. res, 31-38, ch. chem, 38-45.

MILLER, C(lemmy) O(lin), *Physiological chemistry*. New Lisbon, Ind, 12/27/96; m. 26, c. 3. A.B, Manchester Col, 20; Ph.D, Chicago, 26. Kremers-Urban Co, pres, 47-.

MILLER, Donald Elbert, *Biology*. Germano, O, 4/6/06; m. 31, c. 1. A.B, Thiel Col, 25; M.S, Michigan, 29, Ph.D, 35. Ball State Teachers Col, 36-, prof, 49-.

MILLER, Emery P(arker), *Physics*. Duncansville, Pa, 3/23/08; m. 35. A.B, Lafayette Col, 29, M.A, 30; Ph.D, Purdue, 36. Purdue, 30-43, asst. prof, 38-43; Ransburg Electrocoating Corp. (Indianapolis), dir. res, 43-.

MILLER, Fred A., *Botany*. Brooklyn, Ind, 9/5/78. B.S, Purdue, 08, M.S, 12. Eli Lilly & Co, prod. supt, biol. dept, 08-.

MILLER, Fred M(athias), *Organic chemistry, Scientific crime detection*. Birdseye, Ind, 3/30/05; m. 36. A.B, Indiana, 29, A.M, 33, Ph.D, 35. Fed. Bur. Invest, special agt, 35-.

MILLER, George J., *Geography*. Sturgis, Mich, 2/7/80; m. 07, c. 1. S.B, Chicago, 07, S.M, 13. Minn. State Teachers Col. (Mankato), prof, 13-48; Indiana, 48-50. Ed. *Jour. of Geography* for 30 years.

MILLER, Glen Russel, *Organic chemistry*. Wellman, Ia, 5/6/02; m. 26, c. 2. B.A, Hesston Col, 24; M.S, Iowa, 25, Ph.D, 30. Goshen Col, 25-, prof, 34-.

MILLER, Glen T(reat), *Mathematics*. York, Nebr, 11/2/00; m. 29, c. 1. B.S, Des Moines, 26; M.S, Iowa State Col, 28; Ph.D, Purdue, 41. Purdue, 28-, asst. prof, 41-.

MILLER, Glennard E(arl), *Chemistry*. Converse, Ind, 8/2/94. B.S.Ch.E, Purdue, 21. Standard Brands, Inc, Fleischmann Labs, 23-48, head anal. dept, 28-48.

MILLER, Harold V(incent), *Geography*. New Albany, Ind, 4/8/09; m. 35, c. 4. B.S, Ball State Teachers Col, 32; M.S, Chicago, 34. Tenn. Valley Authority, 34-44; State Planning Comm, Tenn, 44-.

MILLER, H(arry) F(ullerton), *Chemistry*. Michigan City, Ind, 09. A.B, Ohio State, 32, M.S, 33, Ph.D, 35. Gen. Elec, 36-, head chem. sect, 41-.

MILLER, Henry C(hristian), *Chemistry*. Homestead, Ia, 4/12/11; m. 39, c. 4. B.S, Iowa, 33, M.S, 36, Ph.D, 39. Eli Lilly & Co, 39-.

MILLER, John A(nthony), *Astronomy* (starred). Greensburg, Ind, 12/16/59, died, 46. A.B, Indiana, 90; A.M, Stanford, 93; Ph.D, Chicago, 99. Indiana, prof, 96-06; Swarthmore Col, prof, 06-29, v. p, 13-29.

MILLER, Lawrence P(eter), *Biochemistry.* Old Zionsville, Pa, 4/17/01; m. 22, 35, c. 2. B.S, Pa. State Col, 23; M.S, Wisconsin, 25; Ph.D, Purdue, 33. Boyce Thompson Inst. Plant Res, 25-, biochem, 38-; Purdue, exp. sta, 26-29.

MILLER, L(ee) W(allace), *Botany.* Wellman, Ia, 3/11/04. A.B, Goshen Col, 27; M.S, Iowa, 28, Ph.D, 33. Ill. State Nor, 35-, assoc. prof, 42-.

MILLER, Newton, *Medicine.* Sharptown, Ind, 3/20/79; m. 11, c. 1. A.B, Indiana, 05, A.M, 06; Ph.D, Clark, 08; M.D, Rush, 24. Utah, prof. zool, 15-26.

MILLER, Paul R., *Plant pathology.* Rockport, Ind, 4/30/05; m. 33, c. 3. B.S, Indiana, 29; M.S, Purdue, 31; Ph.D, Geo. Washington, 39. U. S. Dept. Agr, 31-.

MILLER, Paul W(illiam), *Plant pathology.* Mt. Vernon, Ind, 5/2/01; m. 28. B.S, Kentucky, 23, M.S, 24; Ph.D, Wisconsin, 29. U. S. Dept. Agr, 30-.

MILLER, Rolla W(oods), *Chemistry.* Aurora, Ind, 10/2/92. A.B, Wabash Col, 13; M.S, Kans. State Col, 15; Ph.D, Pittsburgh, 17. Hope Nat. Gas and Affiliated Cos, 21-, dir. res, 33-.

MILLER, Walter C(harles), *Physics.* Philadelphia, Pa, 12/9/18; m. 44, c. 3. B.S, St. Joseph's Col. (Phila.), 40; M.S, Notre Dame, 42, Ph.D, 48. Notre Dame, 46-, asst. prof, 47-.

MILLER, Warren Widmer, *Chemistry.* Bluffton, Ind, 3/23/15; m. 41, c. 2. B.S, Ohio State, 41; Ph.D, California, 44. Brookhaven Natl. Lab, 47-.

MILLER, Wilford Stanton, *Psychology.* Raber, Ind, 1/6/83; m. 02, c. 4. A.B, Indiana, 10, A.M, 11, Ph.D, 17. Ind. pub. schs, 00-07; Minnesota, 16-48, prof, 20-48.

MILLER, William A(lfonso), *Physics.* Portland, Ore, 3/16/12; m. 38, c. 3. B.S, Ore. State Col, 32, M.S, 36; Ph.D, Purdue, 41. Radio Corp. Am. lab, res. and design eng, 42-.

MILLIGAN, Morris F(ranklin), *Chemistry.* Attica, Ind, 11/11/14; m. A.B, Illinois, 37; Ph.D, Purdue, 42. Miles Labs, Inc. (Elkhart, Ind.), res. dir, 42-46; Los Alamos Sci. Lab, 47-.

MILLS, C(larence) A(lonzo), *Medicine.* Miami, Ind, 12/9/91. A.B, South Dakota, 17; Ph.D, Cincinnati, 20, M.D, 22. Cincinnati, 19-, asst. prof, 23-25, dir. labs. exp. med, 25-, prof. exp. med, 30-. Climatic and weather influences on health and disease.

MILLS, C(lifford) N(ewton), *Mathematics.* Carlos City, Ind, 8/86; m. 14, c. 3. B.S, Franklin Col, 10; A.M, Indiana, 15; Ph.D, Wisconsin, 39. Ill. State Nor, prof, 25-.

MILLS, J(ack), *Chemistry.* N. Y. C, 12/22/20; m. 43, c. 2. A.B, Columbia Col. (Ill.), 41; Ph.D, Illinois, 45. Eli Lilly & Co, 46-.

MILLS, Roscoe E(dward), *Civil engineering.* Monitor, Ind, 12/20/97; m. 22, c. 2. B.S, Purdue, 20, M.S, 28. Purdue, 21-, instr, 37-39, assoc. prof, 44-48, res. prof, 48-.

MILLS, William W(histler), *Analytical chemistry.* Pontiac, Kans, 5/8/92. B.S, Franklin Col, 14; M.S, Ohio State, 21, Ph.D, 25. Dupont Co, rayon dept, tech. div, 42-.

MILNER, Clyde A(lonzo), *Psychology.* Unitia, Tenn, 8/2/99; m. 28. B.A, Wilmington Col, 21; M.A, Haverford Col, 22; B.D, Hartford Theol. Sem, 24, Ph.D, 34. Earlham Col, 24-, prof, 27-30; Guilford Col, 30-, pres, 34-.

MILNER, Ernestine Cookson, *Psychology.* New Straitsville, O, 9/25/96; m. 28. A.B, Miami (O.), 18, B.S, 19; M.A, Wellesley Col, 26. Earlham Col, asst. prof, 26-30; Guilford Col, assoc. prof, 30-.

MINER, Floyd D(uane), *Entomology.* Ft. Wayne, Ind, 6/25/15; m. 38, c. 3. B.S, Okla. A. & M. Col, 40, M.S, 41. Arkansas, 42-.

MITCHELL, Allan C(harles) G(ray), *Physics* (starred). Houston, Tex, 10/1/02; m. 26, c. 2. B.S, Virginia, 23, M.S, 24; Ph.D, Calif. Inst. Tech, 27. Indiana, prof, 38-.

MITCHELL, Dana P(aul), *Physics.* Fowler, Ind, 5/2/99; m. 24, c. 1. B.S, Tri-State Col, 18; Ph.D, Columbia, 36. Tri-State, instr, 18-21; Columbia, 24-, assoc. prof, 45-.

MITCHELL, H(oward) L(ee), *Chemistry.* Dewey, Okla, 11/17/14; m. 41, c. 1. B.S, Okla. A. & M. Col, 38; Ph.D, Purdue, 46. Kans. State Col, asst. prof, 46-.

MITCHELL, Hugh C(hester), *Geodesy, Astronomy.* Jackson Co, Tex, 4/15/77. C.E, Notre Dame, 95, B.S, 98. U. S. Coast & Geod. Surv, 98-03, sr. math, 21-40.

MITCHELL, Jack Harris, Jr, *Biochemistry.* Auburn, Ala, 9/15/11; m. 44, c. 1. B.S, Clemson Col, 33; Ph.D, Purdue, 41. South. Res. Inst, head sect, 47-.

MITCHELL, Louis, *Civil engineering.* Tippecanoe City, O, 2/12/85; m. 09, c. 2. B.S, Earlham Col, 09; B.S, Purdue, 10; S.M, Mass. Inst. Tech, 15. Syracuse, 10-, prof, 19-22, dean, 22-.

MITCHELL, William D(avid), *Civil engineering*. Oblong, Ill, 9/21/02; m. B.S, Purdue, 27, C.E, 38; M.S, Illinois, 46. U. S. Geol. Surv, hydraul. eng,—Ind, 30-39, —Ill, 39-.

MIZELLE, John D(ary), *Zoology*. Violin, La, 1/18/05; m, c. 5. B.S, Louisiana, 32, A.M, 33; Ph.D, Illinois, 36. Notre Dame, 40-, prof, 49-. Ed, *Am. Midland Nat.*

MOENKHAUS, W(illiam) J., *Zoology* (starred), *Physiology*. Huntingburg, Ind, 1/6/71, died, 48; m. 01, c. 2. A.B, Indiana, 94, A.M, 95; Ph.D, Chicago, 03. Indiana, 95-41, asst. prof, 01-04, assoc. prof. physiol, 04-08, prof. physiol, 08-41. Ind. Acad. Sci. (pres, 16).

MOFFETT, Robert Bruce, *Organic chemistry*. Madison, Ind, 6/8/14; m. 41, c. 2. A.B, Hanover Col, 37; A.M, Illinois, 39, Ph.D, 41. Upjohn Co, 47-.

MOFFETT, Sam(uel) M(cKee), *Organic chemistry*. Madison, Ind, 1/23/16; m. 42, c. 1. A.B, Hanover Col, 38; Ph.D, Ohio State, 42. Park Col, asst. prof, 46-.

MOFFETT, Walter K(weigwin), *Organic chemistry*. 2/2/14; m. 36. B.S, Washington Col. (Md.), 34. Dupont Co, 35-42; Wabash River Ordnance Works (Ind.), chem. eng, 42-45.

MOHLER, Orren (Cuthbert), *Solar physics*. Indianapolis, Ind, 7/28/08; m. 35, c. 2. A.B, Mich. State Nor. Col, 29; A.M, Michigan, 30, Ph.D, 33. Michigan, 45-, assoc. prof, 46-.

MOLBY, Fred A., *Physics*. Linn, Kans, 1/5/78; m. 07, 46. A.B, Baker, 04; A.M, Cornell, 08, Ph.D, 10. Indiana, asst. prof, 12-18; West Virginia, 20-48, prof, 21-48.

MOLONY, William Hayes, *Physics*. Crawfordsville, Ind, 12/4/84. Litt.B, Notre Dame, 07. Notre Dame, prof, 19-32, 43-.

MONACELLI, Walter J(oseph), *Chemistry*. Albion, N. Y, 1/16/14; m. 47. B.S, Notre Dame, 38, Ph.D, 41. Sinclair Ref. Co. Ind, 42-43.

MONFORT, W(ilson) F(orsyth), *Chemistry*. Greensburg, Ind, 6/24/63, died, 31. A.B, Marietta Col, 90, A.M, 96. Marietta Col, prof, 94-06.

MONRAD, Carl C(orydon), *Chemical engineering*. Buffalo, N. Y, 1/15/05. B.S.E, Michigan, 27, M.S.E, 28, Ph.D, 30. Standard Oil Co. Ind, 30-37; Carnegie Inst. Tech, 37-, prof, 42-.

MONROE, Kenneth Potter, *Chemistry*. Mt. Vernon, Ind, 9/27/91; m. 17, c. 3. B.S, Chicago, 13; Ph.D, Columbia. Dupont Co, 20-27; Colgate-Palmolive-Peet Co, 27-32; Lever Brothers Co, 32-36.

MONROE, Marion, *Psychology*. Mt. Vernon, Ind, 2/4/98. A.B, Oklahoma, 19; A.M, Chicago, 24, Ph.D, 29. Child Guidance Center, ch. psych, 32-36; Pittsburgh Bd. Educ, specialist, 36-.

MONTGOMERY, B(asil) Elwood, *Entomology*. Cynthiana, Ind, 10/10/99; m. 30, c. 1. B.Sc, Oakland City Col, 22; M.S, Purdue, 25; Ph.D, Iowa State Col, 35. Ind. high schs, 22-28; Purdue, 29-, exp. sta, 24-41, assoc. prof, 42-.

MONTGOMERY, Charles Edgar, *Biology*. Danville, Ind, 1/17/84. B.S, Chicago, 13, Ph.D, 30; M.S, Purdue, 18. Ind. high schs, 10-16; North. Ill. State Teachers Col, 18-, prof, 20-.

MONTGOMERY, James B(raxtol), *Physical chemistry*. Ark, 10/7/13. B.S, Ark. State Col, 34; M.S, Purdue, 40, Ph.D, 42. Hercules Powder Co. Exp. Sta, 42-.

MOODY, H(oward) W(ilson), *Physics*. Garrison, Ia, 10/24/77; m. 02, c. 2. A.B, Cornell Col, 02; Ph.D, Chicago, 12. Valparaiso, prof, 30-, dean col. eng, 31-41.

MOON, V(irgil) H(olland), *Pathology*. Craig, Ind, 7/31/79. A.B, Kansas, 10, M.S, 11; M.D, Rush, 13. Indiana, assoc. prof. and prof, 14-27; Jefferson Med. Col, prof, 27-.

MOONEY, James, *American anthropology* (starred). Richmond, Ind, 2/10/61, died, 21. Bur. Am. Enthnol, enthnol, 85-21.

MOORE, A(ddison) W(ebster), *Philosophy*. Plainfield, Ind, 7/30/66, died, 30; m. 91, c. 1. A.B, DePauw, 90, A.M, 93; Ph.D, Chicago, 98. Chicago, 98-30, prof, 09-30. Philos. Assn. (ex-pres.).

MOORE, Bruce V(ictor), *Psychology*. Kokomo, Ind, 9/9/91; m. 24, c. 1. A.B, Indiana, 14, M.A, 17; Ph.D, Carnegie Inst. Tech, 21. Prin, Ind. high schs, 14-16; Pa. State Col, 20-, prof, 28-.

MOORE, Edmond E(ugene), *Chemistry*. Ware, Mass, 8/14/06; m. 24. B.S, Worcester Poly. Inst, 18; M.S, Iowa State Col, 24, Ph.D, 28. Swan-Myers Co. (Indianapolis), ch. chem, 28-31; Abbott Labs, res. chem, 31-.

MOORE, George T(homas), *Botany* (starred). Indianapolis, Ind, 2/23/71. B.S, Wabash Col, 94; A.B, Harvard, 95, A.M, 96, Ph.D, 00. Washington (St. Louis), prof, 09-.

MOORE, H(erbert) C(harles), *Dairy husbandry*. Frankfort, Ind, 9/24/00; m. 29, c. 2. B.S, Purdue, 23; M.S, Minnesota, 25. New Hampshire, assoc. prof 28-.

MOORE, John Adam, *Botany*. Cambridge, Mass, 3/3/08. B.S, Butler, 28; M.S, State Col. Wash, 30; Ph.D, Washington (St. Louis), 34. North. Montana Col, asst. prof, 42-.

MOORE, Joseph, *Geology, Zoology*. Washington, Ind, 32, died, 05. B.S, Harvard, 61; A.M, Haverford Col, 68; LL.D, Indiana, 78. Earlham Col, prof, 61-65, pres, 69-83, prof. geol. and curator, Museum, 88-00.

MOORE, Marjorie B(arr), *Chemistry.* Kansas, Ill, 8/12/96; m. 24. B.S, Purdue, 19; M.S, Iowa State Col, 24, Ph.D, 28. Eli Lilly & Co, 20-22; Swan-Myers Co. (Indianapolis), res. chem, 29-31; Abbott Labs, 31-.

MOORE, Marvin G., *Mathematics.* Harrison, Ark, 12/8/08; m. 35, c. 1. A.B, Arkansas, 31; M.A, Illinois, 32, Ph.D, 38. Indiana, instr, 37-40; Tri-State Col, prof, 40-43; Bradley, 43-, assoc. prof, 47-48, prof, 48-.

MOORE, R(ichard) B(ishop), *Chemistry* (starred). Cincinnati, O, 5/6/71, died, 31. B.S, Chicago, 96. Butler, prof, 05-11; U. S. Bur. Mines, physical chem, 12-19, ch. chem, 19-.

MOORE, Thomas W(alker), *Mathematics.* Washington, Pa, 11/5/02. B.S, Washington and Jefferson Col, 22; Ph.D, Yale, 27. Indiana, asst. prof, 30-33; U. S. Naval Acad, 35-, asst. prof, 40-.

MOORHEAD, John Gerald, *Physics.* Remington, Ind, 5/24/95; m. 30. A.B, Indiana, 21, A.M, 24; Ph.D, Chicago, 31. Purdue, instr, 22-26; Alfred, prof, 46-.

MOREY, Glen H., *Chemistry.* Alma, Mich, 02. B.S, Chicago, 29, M.S, 30, Ph.D, 32. Commercial Solvents Corp. (Terre Haute), 36-; Glas-Col Apparatus Co. (Terre Haute), pres, 40-.

MORGAN, Clellen L(eo), *Psychology.* Lakeville, O, 8/9/03; m. 28, c. 5. A.B, Denver, 29; M.A, Iowa, 30, Ph.D, 31. Purdue, 31-47, assoc. prof, 37-47.

MORGAN, John J(acob) B(rooke), *Psychology.* Norristown, Pa, 8/23/88, died, 45. A.B, Taylor, 11; A.M, Columbia, 13, Ph.D, 16; B.D, Drew Sem, 14. Northwestern, assoc. prof, 25-45.

MORGAN, L(awrence) O(nis), *Neurology, Anatomy.* Turon, Kans, 5/22/00; m. 24, c. 2. B.A, Southwest. Col. (Kans.), 22; M.A, Indiana, 23; Ph.D, Cornell, 26. Indiana, prof, 49-.

MORGAN, Raymond, *Physics.* Centerville, Ind, 6/5/93; m. 25, c. 2. A.B, Indiana, 16, A.M, 17; Ph.D, Pennsylvania, 22. Pennsylvania, 19-41, asst. prof, 24-41; Maryland, prof, 42-.

MORGAN, W(illiam) P(itt), *Zoology, Genetics.* Indianapolis, Ind, 11/17/93; m. 20, c. 3. A.B, Ind. Cent. Col, 19; A.M, Indiana, 22, Ph.D, 26. Ind. Cent. Col, 19-, prof, 26-. Ind. Acad. Sci. (treas, 35-50, pres, 51-).

MORLAN, George K(olmer), *Psychology.* Indianapolis, Ind, 5/29/04; m. 38, c. 1. B.A, Butler, 26; M.A, Columbia, 31, Ph.D, 36. Springfield Col, assoc. prof, 47-.

MORRAL, F(acundo) R(olf), *Metallurgy.* Chemnitz, Germany, 6/19/07, nat, 32; m. 34, c. 4. B.S, Mass. Inst. Tech, 32; Ph.D, Purdue, 40. Syracuse, assoc. prof, 48-.

MORRICAL, Keron C(aldwell), *Physics, Electrical engineering.* Farmer City, Ill, 5/28/08. B.S, Illinois, 29, M.S, 33, Ph.D, 36. R.C.A. Mfg. Co. (Indianapolis), res, 36-.

MORRIS, Charles S(tephen), *Physics.* Hutchinson, Kans, 8/5/92. A.B, Manchester Col, 13; A.M, Ohio State, 15, Ph.D, 30. Manchester Col, prof, 26-.

MORRIS, Delyte Wesley, *Speech.* Xenia, Ill, 4/11/07; m. 30, c. 2. B.A, Park Col, 28; M.A, Maine, 34; Ph.D, Iowa 36. Ind. State Teachers Col, prof, 38-46; Ohio State, prof, 46-48; South. Illinois Nor, pres, 48-.

MORRIS, Elizabeth H(unt), *Psychology.* Richmond, Ind, 3/2/92. A.B, Wellesley Col, 13, M.A, 18; Ph.D, Columbia, 29. Ind. pub. schs, 13-16; N. Y. State Col. Teachers Col. (Albany), 23-, prof, 35-.

MORRIS, Frank R(ay), *Mathematics.* Pekin, Ind, 6/18/85; m. 13, c. 1. B.S, Valparaiso, 07, B.Pd, 08; A.B, Indiana, 12, A.M, 13; Ph.D, California, 18. Fresno State Col, 21-.

MORRIS, Harold P(aul), *Nutrition.* Salem, Ind, 5/8/00. B.S, Minnesota, 25, Ph.D, 30. U. S. Pub. Health Serv, 38-, Natl. Cancer Inst, 41-.

MORRIS, Humbert, *Physical chemistry.* Chicago, Ill, 1/30/17; m. 36. B.S, Ohio (Athens), 39; Ph.D, Northwestern, 43. Standard Oil Co. Ind. (Whiting), 44-47.

MORRIS, Leonard Leslie, *Truck crops.* Terre Haute, Ind, 8/5/14; m. 40. B.S, Purdue, 37; M.S, Cornell, 39, Ph.D, 41. California, exp. sta, instr, 41-47, asst. prof, 47-.

MORRIS, V(lon) N(eilan), *Chemistry.* Colorado Springs, Colo, 4/1/01; m. 24, c. 2. B.S, Purdue, 22, M.S, 24; Ph.D, Minnesota, 26. Firestone Tire & Rubber Co. (Ohio), res. chem, 27-35; Indust. Tape Corp, dir. labs, 40-.

MORRISON, Bess V(iemont), *Textiles.* Mackinaw, Ill, 10/15/98; m. 38. B.S, Purdue, 21; M.S, Kans. State Col, 28. Ind. high schs, 21-25; U. S. Dept. Agr, Bur. Human Nutrition & Home Econ, 28-.

MORRISON, Dwight E(dward), *Organic chemistry.* Boone, Ia, 11/19/19. B.S, Iowa State Col, 42; A.M, Columbia, 44, Ph.D, 46. Eli Lilly & Co, 45-.

MORRISON, Edwin, *Physics.* Bloomingdale, Ind, 3/5/61, died, 39. B.S, Earlham Col, 88, M.S, 91. Earlham, prof, 06-19; Mich. Agr. Col, 19-. Ind. Acad. Sci. (v. p, 10).

MORRISON, Harold, *Entomology*. McCordsville, Ind, 5/24/90. A.B, Cornell, 14; A.M, Stanford, 15; Sc.D, Harvard, 27. Asst. state entom, Ind, 11-15; U. S. Dept. Agr, 16-, sr. entom, 28-.

MORROW, Marie B(etzner), *Botany*. Bunker Hill, Ind, 8/22/99. A.B, Texas, 26, A.M, 27, Ph.D, 32. Texas, 27-, assoc. prof, 45-.

MORSE, Stanley W(allace), *Biochemistry*. Philadelphia, Pa, 6/21/98; m. 23, c. 2. A.B, Hanover Col, 21; A.M, Stanford, 26, Ph.D, 32. San Francisco State Col, prof, 26-.

MORY, A(ustin) V(an) H(oesen), *Chemistry*. Masonville, Ia, 11/15/69; m. 02, 35, c. 1. B.S, Rose Poly. Inst, 94, Chem.E, 14. Armour & Co, 96-07; Sears Roebuck & Co, 11-20; Bakelite Corp. (N. J.), assoc. dir. res, 24-34.

MOSELEY, R(ussell) L(eRoy), *Neuroanatomy*. Evansville, Ind, 3/30/13. A.B, Wabash Col, 34; M.S, St. Louis, 36; Ph.D, Minnesota, 39. Oklahoma, asst. prof, 40-.

MOSER, Carl M(athew), *Chemistry*. Terre Haute, Ind, 2/15/22. A.B, Indiana, 42; M.S, Wisconsin, 44; Ph.D, Harvard, 48. Hopkins, instr, 48-.

MOSES, Douglas Verne, *Chemical engineering*. Ames, Ia, 9/12/95; m. 18, c. 2. B.S, Iowa State Col, 19, M.S, 21, Ph.D, 25. Graver Corp. (Ind.), tech. dir, 25-29; Dupont Co, tech. supt, 29-.

MOSS, Arthur Parks, *Chemistry*. Clyde, N. C, 9/21/11; m. 40, c. 2. B.S, N. C. State Col, 32. Carbide & Carbon Chems. Corp, dept. head (Ind.), 35-47, asst. gen. supt, 47-.

MOSS, M(elvin) L(ane), *Analytical chemistry*. Deerfield, O, 7/3/15. B.S, Mt. Union Col, 38; M.S, Purdue, 40, Ph.D, 42. Hercules Powder Co, res. chem, 42-.

MOTT, Gerald O., *Agronomy*. Hastings, Nebr, 3/31/12. B.S, Nebraska, 34; Ph.D, Cornell, 40. Purdue, exp. sta, prof, 39-.

MOTTIER, David M(yers), *Botany* (starred). Patriot, Ind, 9/4/64, died, 40; m. 93, c. 1. A.B, Indiana, 91, A.M, 92; Ph.D, Bonn, 97. Indiana, 91-37, prof, 98-37. Ind. Acad. Sci. (pres, 07).

MOULTON, Benjamin, *Geography*. Medford, Mass, 8/27/17; m. 44, c. 2. A.B, Clark, 39; M.S, Butler, 41; M.A, Indiana, 45, Ph.D, 50. Butler, 43-, asst. prof, 48-.

MOYER, Andrew J(ackson), *Mycology*. Star City, Ind, 11/30/99; m. 32. A.B, Wabash Col, 22; M.S, N. Dak. Col, 25; Ph.D, Maryland, 29. U. S. Dept. Agr, 29-.

MOYER, Jacob, *Chemistry*. Clay City, Ind, 4/4/76; m. 07, c. 1. A.B, Greenville Col, 01; A.M, Michigan, 07. Greenville Col, prof, 07-17; Seattle Pacific Col, prof, 25-46.

MUELLER, Arthur J(acob), *Chemistry*. Evansville, Ind, 7/10/12; m. 41. B.S, Ala. Poly. Inst, 35. Mead Johnson & Co, res. chem, 35-.

MUELLER, Charles W(illiam), *Electronics*. New Athens, Ill, 2/12/12; m. 41, c. 2. B.S, Notre Dame, 34; M.S, Mass. Inst. Tech, 36, Sc.D, 42. Radio Corp. Am. labs, res. phys, 42-.

MUELLER, Edward, *Chemistry*. South Bend, Ind, 10/16/83; m. 13. B.S, Purdue, 02; A.M, Harvard, 05, Ph.D, 07. Mass. Inst. Tech, 11-29, assoc. prof, 20-29.

MUELLER, George V(ernon), *Electrical engineering*. Sawyer, Kans, 3/21/04; m. 33, c. 1. B.S, Kans. State Col, 24; M.S, Purdue, 27. Purdue, 25-.

MUELLER, John H(enry), *Statistics*. St. Charles, Mo, 2/8/95; m. 35. A.B, Missouri, 20, M.A, 21; Ph.D, Chicago, 28. Indiana, 35-, prof, 49-.

MUELLER, Kate Hevner, *Psychology*. Derry, Pa, 11/1/98; m. 35. A.B, Wilson Col, 20; A.M, Columbia, 23; Ph.D, Chicago, 28. Indiana, 36-, dean women, 38-46, assoc. prof, 46-.

MULDOON, Hugh C(ornelius), *Pharmacy*. Truxton, N. Y. Ph.G, Albany Col. Phar, Union Col. (N. Y.), 12; B.S, Valparaiso, 20. Valparaiso, prof, dean sch. phar, 20-25; Duquesne, 25-.

MULLEN, Lowell A(rthur), *Plant ecology*. Sheridan, Ind, 2/16/04. B.S, Butler, 26; M.S, State Col. Wash, 28, Ph.D, 33. Indianapolis Col. Phar, prof. biol, 29-30; U. S. Dept. Agr, Soil Conserv. Serv, agron, 36-.

MULLENDORE, Naomi, *Botany*. A.B, Franklin Col, 21; M.S, Chicago, 28, Ph.D, 44. Franklin Col, 22-, prof, 38-.

MULLER, H(ermann) J(oseph), *Genetics* (starred). N. Y. C, 12/21/90; m. 39, c. 2. B.A, Columbia, 10, M.A, 11, Ph.D, 16, hon. D.Sc, 49; D.Sc, Edinburgh, 40. Texas, assoc. prof, 20-36; Indiana, prof, 45-. Am. Assn. Adv. Sci. prize, 27; Nobel prize, 46; Natl. Acad. Sci; Soc. Nat. (pres, 43); Genetics Soc. (pres, 47); Int. Cong. Genetics (pres, 48); Human Genetics Soc. (pres, 49). Gene mutation; biological effects of radiation; human genetics; properties of chromosome parts.

MULLIN, Charles J(ames), *Theoretical physics*. St. Louis, Mo, 2/26/16; m. 40, c. 2. B.S, St. Louis, 38; Ph.D, Notre Dame, 42. Notre Dame, asst. prof, 45-.

MULLISON, Wendell R(oxby), *Plant physiology*. Philadelphia, Pa, 9/24/13; m. B.A, New Mexico, 34; Ph.D, Chicago, 38. Purdue, instr, 40-44; Dow Chem. Co, 46-.

MUNCH, Ralph Howard, *Physical chemistry.* Lafayette, Ind, 5/5/11; m. 35, c. 5. B.S, North Carolina, 31, M.S, 32; Ph.D, Northwestern, 36. Monsanto Chem. Co, 37-.

MUNCIE, J(esse) H(oward), *Plant pathology.* Middlebury, Ind, 7/3/90; m. 13, c. 5. A.B, Wabash Col, 12; M.A, Cornell, 16; Ph.D, Iowa State Col, 25. U. S. Dept. Agr, 22-29; Mich. State Col, res. prof, 29-.

MUNDEL, M(arvin) E(verett), *Engineering.* N. Y. C, 4/20/16; m. 46. B.S, N. Y. U, 36; M.S, Iowa, 38, Ph.D, 39. Purdue, 42-, prof, 48-.

MUNDIE, Lloyd G(eorge), *Physics.* Udney, Ont, Can, 12/15/16, nat; m. 42, c. 1. B.Sc, Saskatchewan, 35, M.Sc, 37; Ph.D, Purdue, 43. Purdue, instr, 39-47; Naval Ordnance Lab, infra-red phys, 47-.

MUNRO, George W(esley), *Engineering.* Grand Rapids, Mich, 2/15/72. B.S, Purdue, 97, E.E, 98. Purdue, 06-42, prof. thermodyn, 21-42.

MURPHY, Hubert W(illia)m, *Pharmaceutical chemistry.* Circle, Mont, 11/3/15. B.S, Montana, 37, M.S, 39; Ph.D, Purdue, 42. Eli Lilly & Co, chem, 43-.

MURRAY, C(laude) M(errill), Jr, *Petroleum engineering.* Tulsa, Okla, 3/5/22; m. 45. B.S, Purdue, 42; M.S, Tulsa, 46. Anderson-Prichard Oil Corp, 46-.

MURRAY, F(rancis) Joseph, *Bacteriology.* Jersey City, N. J, 10/16/20; m. 47, c. 1. B.S, St. Peters Col, 42; Ph.D, Purdue, 48. William S. Merrell Co, asst. ch. bact, 48-.

MURRAY, Herbert C(harles), *Bacteriology.* Indianapolis, Ind, 8/4/12; m. 46, c. 1. B.S, Purdue, 38, M.S, 40, Ph.D, 42. Upjohn Co, 42-.

MURRAY, M(aurice) J(ackson), *Chemistry.* Moran, Ind, 8/2/04; m. 28, 32, c. 2. A.B, DePauw, 25; Ph.D, Cornell, 29. Ill. Inst. Tech, prof, 40-44; Universal Oil Prods. Co, 44-, res. co-ordinator, 48-.

MURRAY, Merritt J(oseph), *Genetics.* Lawrenceville, Ill, 4/3/08; m. 36, c. 3. B.S, Indiana, 30, A.M, 34; Ph.D, Cornell, 38. A. M. Todd Co, geneticist and plant breeder, 47-.

MURRAY, Raymond G(orbold), *Histology.* Tokyo, Japan, 5/12/16; m. 38, c. 2. S.B, Monmouth Col, 37; Ph.D, Chicago, 42. Indiana, assoc. prof, 49-.

MURRAY, William S(ingler), *Chemistry.* Chicago, Ill, 8/16/17. B.S, Notre Dame, 39, M.S, 40, Ph.D, 42. Dupont Co, Jackson Labs, res. chem, 42-.

MURRELL, William S(ummerfield), Jr, *Chemical engineering.* Witts, Tenn, 7/15/21. B.S, Tennessee, 44. Dupont Co. (Ind.), chem, 45-46, super, 48-.

MUSSELMAN, Amos S(entman), *Chemistry.* Gettysburg, Pa, 10/15/92; m. 16, c. 1. B.S, Gettysburg Col, 12; Ph.D, Hopkins, 15. Standard Oil Co. Ind, 17-, supt. heavy oils div, 31-43, asst. gen. supt. Whiting refinery, 43-.

MUSSER, Marc J(ames), Jr, *Internal medicine.* Terre Haute, Ind, 7/3/10; m. 33, 46, c. 3. A.B, Wisconsin, 32, M.D, 34. Wisconsin, 40-, assoc. prof, 47-.

MYERS, Burton D(orr), *Histology* (starred). Attica, O, 3/30/70; m. 04, c. 3. Ph.B, Buchtel, 93; A.M, Cornell, 00; M.D, Liepzig, 02. Indiana, sch. med, 03-, prof, 06-40, asst. dean, 20-27, dean at Bloomington, 27-40.

MYERS, C(lovis), *Organic chemistry.* Bloomington, Ind, 3/17/14; m. 38, c. 3. A.B, Simpson Col, 34; M.S, Iowa, 35, Ph.D, 37. Dupont Co, 41-.

MYERS, Everett C(lark), *Biology.* Cleveland, O, 1/4/96; m. 26, c. 2. A.B, Western Reserve, 21; Ph.D, Hopkins, 27. DePauw, asst. prof, 26-29; Bowling Green State, assoc. prof, 47-.

MYERS, Mabel A(delaide), *Histology, Zoology.* Indianapolis, Ind, 10/8/00. A.B, Pomona Col, 21, M.A, 22; Ph.D, Cornell, 26. San Diego State Col, asst. prof, 46-.

MYRICK, R(aymond) T(hompson), *Chemistry.* Richmond, Ind, 11/16/88, died, 48. B.S, Earlham Col, 12; Ph.D, Hopkins, 16. Earlham, instr, 12-13; Standard Oil Co. Ind, 16-48.

NADEAU, Gale F(rancis), *Chemistry.* South Bend, Ind, 3/3/05; m. 28, c. 2. B.S, Toledo, 27, M.S, 28; Ph.D, Ohio State, 31. Eastman Kodak, 31-.

NAPLES, F(elix) John, *Organic chemistry.* Quadrelle, Italy, 7/7/12. A.B, Youngstown Col, 33; M.S, Vermont, 34; Ph.D, Indiana, 36. Youngstown Col, assoc. prof, 40-.

NASH, Harold A(nthony), *Chemistry.* Corvallis, Ore, 9/28/18; m. 46, c. 1. B.S, Oregon State Col, 40; Ph.D, Purdue, 47. Pitman-Moore Co. (Indianapolis), res, 47-.

NASH, John P(urcell), *Mathematics.* Bisbee, Ariz, 1/17/15. A.B, California, 36; A.M, Rice Inst, 38, Ph.D, 40. Notre Dame, instr, 40-.

NAST, Charlotte G(eorgia), *Botany.* Michigan City, Ind, 1/19/05. B.A, Wisconsin, 27, M.A, 29; Ph.D, California, 38. Harvard, curator, wood anat. lab, 38-47.

NAYLOR, Joseph P., *Physics.* Pennsville, O, 4/4/53, died, 38. M.S, Indiana, 85. High schs. (Indianapolis), 83-85; Indiana, 85-91, prof, 87-91; DePauw, prof, 91-25. Ind. Acad. Sci. (pres, 12).

NEAL, O(ren) R(obert), *Agronomy*. Lebanon, Ind, 8/3/07; m. 35, c. 2. B.S.A, Purdue, 30; M.S, Iowa State Col, 32. U. S. Dept. Agr, Soil Conserv. Serv, 36-, proj. super, 41-.

NEEDY, John A(lfred), *Mechanical engineering*. Louisville, Ky, 8/28/89. B.S, Kentucky, 11, M.E, 29; M.S, Purdue, 22. Purdue, 20-26, asst. prof, 22-26; Ohio Northern, dean eng, 26-.

NEF, John Ulric, *Chemistry* (starred). Apfenzell, Switzerland, 6/14/62, died, 15; m. 98. A.B, Harvard, 84; Ph.D, Munich, 86. Purdue, prof, 87-89; Chicago, prof, 92-15.

NEHER, C(larence) M(arcellus), *Organic chemistry*. Twin Falls, Idaho, 5/14/16; m. 39, c. 3. A.B, Manchester Col, 37; M.S, Purdue, 39, Ph.D, 41. Ethyl Corp, res, 41-45, super, 45-.

NEHER, Harry T(rainor), *Organic chemistry*. Nappanee, Ind, 3/30/01; m, c. 2. B.S, Northwestern, 24, M.S, 25, Ph.D, 30. Rohm & Haas Co, res. chem, 30-.

NEHER, Maynard B(ruce), *Chemistry*. Greenville, O, 4/2/23; m. 44, c. 1. A.B, Manchester Col, 44; Ph.D, Purdue, 47. Ohio (Athens), asst. prof, 47-.

NEHER, O(scar) W(arner), *Botany*. Petroleum, Ind, 6/22/87; m. 20, c. 3. B.A, Mt. Morris Col, 16; B.S, Iowa State Col, 20; M.S, Chicago, 30. Manchester Col, prof. biol, 32-.

NELSON, D(otson) M(cGinnis), *Physics*. Charleston, Miss, 12/18/80; m. 14, c. 2. B.S, Miss. Col, 07; A.M, Indiana, 19, Ph.D, 25. Miss. Col, prof, 13-, pres, 32-.

NELSON, E(arl) W(illiam), *Physical chemistry*. Faribault, Minn, 5/27/15; m. 44, c. 1. A.B, St. Olaf Col, 36; M.A, Purdue, 39, Ph.D, 40. N. J. Zinc Co, 40-, sect. ch. 46-.

NELSON, George K(egler), *Chemistry*. Cedar Rapids, Ia, 9/30/16; m. 40, c. 2. A.B, Coe Col, 37; M.S, Purdue, 39, Ph.D, 46. Shell Develop. Co, 46-.

NELSON, John W(hite), *Pharmacy*. Lafayette, Ind, 9/1/16; m. 39, c. 2. B.S, Purdue, 38, Ph.D, 45. Ohio State, assoc. prof, 47-.

NELSON, Oliver E(vans), *Genetics*. Seattle, Wash, 8/16/20. A.B, Colgate, 41; M.S, Yale, 43, Ph.D, 47. Purdue, exp. sta, assoc. genet, 47-.

NELSON, P(recious) Mabel, *Physiological chemistry*. Brookston, Ind, 11/9/87. B.S, California, 15, M.A, 16; Ph.D, Yale, 23. Iowa State Col, 23-, prof, 27-44, dean home econ, 44-.

NELSON, R(alph) E(mory), *Chemistry*. Fowler, Ind, 10/15/86, died, 37. B.S, Purdue, 11, M.S, 13; Ph.D, Chicago, 18. Purdue, 11-37, asst. prof, 19-37.

NERING, Evar D(are), *Mathematics*. Gary, Ind, 7/18/21; m. 42. A.B, Indiana, 42, A.M, 43; A.M, Princeton, 46, Ph.D, 48. Minnesota, asst. prof, 48-.

NESTER, Henry G(eorge), *Medicine*. Indianapolis, Ind, 8/20/03. A.B, Butler, 25; A.M, Indiana, 28, Ph.D, 30, M.D, 49. Butler, 29-42, prof, 40-42.

NESTY, Glenn A(lbert), *Organic chemistry*. Muncie, Ind, 12/23/11; m. 36, c. 2. A.B, DePauw, 34; Ph.D, Illinois, 37. Allied Chem. & Dye Corp, 43-, asst. dir. res. lab, 48-.

NEUMANN, Fred W(illiam), *Organic chemistry*. Chicago, Ill, 9/28/18; m. 44, c. 1. B.S, Illinois, 40; Ph.D, Indiana, 44. Gen. Aniline & Film Corp, 44-.

NEUMANN, G(eorg) K(arl), *Physical anthropology*. Hamburg, Germany, 6/6/07; m, c. 2. Ph.B, Chicago, 30, A.M, 36, Ph.D, 43. Indiana, asst. prof. to assoc. prof, 42-.

NEWLIN, Gene C(laire), *Electronics*. Marion, Ia, 4/3/16; m. 39, c. 2. B.S, Ind. Tech. Col, 41. Los Alamos Sci. Labs, electronics eng, 44-.

NEWLIN, Mildred R(atliff), *Organic chemistry*. Richmond, Ind, 9/8/04; m. A.B, Earlham Col, 25; M.Sc, Ohio State, 30, Ph.D, 32. Earlham Col, instr, 27-28; Col. City N. Y, Queens Col, asst. prof, 48-.

NEWMAN, Horatio Hackett, *Zoology* (starred). Near Seale, Ala, 3/19/75; m, c. 2. B.A, McMaster, 96; Ph.D, Chicago, 05. Culver Mil. Acad. (Ind.), instr, 00-04; Texas, prof, 08-11; Chicago, 11-40, prof, 17-40.

NEWMAN, Paul E(ugene), *Dairying*. Culver, Ind, 5/14/10; m. 39, c. 4. B.S, Purdue, 32; M.S, Wisconsin, 34; Ph.D, Cornell, 37. Beacon Milling Co, 37-, v. p, 48-.

NEWSOM, J(ohn) F(lesher), *Geology, Mining*. Elizabethtown, Ind, 9/6/69; died, 28. A.B, Indiana, 91; A.M, Stanford, 92, Ph.D, 01. Indiana, 95-98, asst. prof, 96-98; Stanford, 99-10, prof, 09-10.

NEWTON, E(dwin) B(ohannon), *Chemistry*. Boonville, Ind, 6/18/01. A.B, Missouri, 23, A.M, 25. B. F. Goodrich Co, 25-, dir. tech. serv. res, 42-.

NEWTON, Roy F(rederick), *Physical chemistry*. Chicago, Ill, 6/22/96; m. 21, c. 2. B.S, Northwestern, 16; Ph.D, California, 20. Purdue, 26-, prof, 35-.

NEWTON, William Lee, *Chemistry*. Diamond, Ind, 8/7/96. A.B, Ind. State Nor. Col, 18; M.S, Geo. Washington, 23. U. S. Dept. Agr, res. chem, 19-26; Coleman & Bell Co, 26-.

NICHOLS, Roy E(lwyn), *Veterinary science.* Leonardsville, N. Y, 7/10/09; m. 32, c. 2. D.V.M, Toronto, 33, D.V.Sc, 43; M.Sc, Ohio State, 34, Ph.D, 41. Purdue, asst. prof, 41-47.

NICHOLSON, Morris E(mmons), (Jr), *Physical metallurgy.* Indianapolis, Ind, 2/15/16; m. 43, c. 2. S.B, Mass. Inst. Tech, 39, Sc.D, 47. Standard Oil Co. Ind, res. metal, 47-.

NICKEL, Allen (Arthur) C(larence), *Internal medicine, Clinical pathology.* Jefferson, Wis, 12/12/94. B.S, Northwestern, 15; B.D, Theol. Sem. Ill, 17; M.D, Rush, 23. Mayo Clinic, 25-31; Caylor-Nickel Clinic (Bluffton, Ind.), 31-.

NICODEMUS, David B(owman), *Physics.* Kobe, Japan, 7/1/16; m. 48. A.B, DePauw, 37; Ph.D, Stanford, 46. Stanford, instr, 46-, asst. prof, 49-.

NICOLL, Paul A(ndrew), *Physiology.* Rawal Pindi, Punjab, India, 1/20/08; m. 37, c. 3. A.B, Tarkio Col, 30; Ph.D, Washington (St. Louis), 36. Indiana, 40-, assoc. prof, 49-.

NIELSEN, Kaj L(eo), *Mathematics.* Nyker, Denmark, 12/3/14, nat, 41; m. 43, c. 1. A.B, Michigan, 36; M.A, Syracuse, 37; Ph.D, Illinois, 40. U. S. Naval Ordnance Plant (Indianapolis), 45-, head math. div, 48-.

NIEUWLAND, Julius Arthur, *Chemistry* (starred), *Botany.* Ghent, Belgium, 2/14/78, died, 36. A.B, Notre Dame, 99, Sc.D, 11; Ph.D, Catholic, 04. Notre Dame, 04-36, prof, 09-36. Ind. Acad. Sci. (pres, 34). Established Am. *Midland Nat. Journal.* Morehead and Nichols Medals, 32, 35.

NISBET, James Douglas, *Metallurgy.* Van Wyck, S. C, 2/9/17; m. 45, c. 1. B.S, Clemson Col, 37. Gen. Elec, 39-, ch. metal, supercharger plant (Ft. Wayne), 41-45.

NIVEN, Ivan (Morton), *Mathematics.* Vancouver, B. C, Can, 10/25/15; m. 39, c. 1. B.A, British Columbia, 34, M.A, 36; Ph.D, Chicago, 38. Purdue, 42-47, assoc. prof, 46-47.

NIXON, H(oward) K(enneth), *Psychology.* Portland, Ind, 95. A.B, Earlham Col, 17; Ph.D, Columbia, 25. Columbia, asst. prof, 28-.

NOBLE, Harrell Vaun, *Electrical engineering.* Near Noblesville, Ind, 4/14/07; m. 39, c. 3. B.S, Purdue, 29. Wright-Patterson Air Force Base, 46-, dir. res, 47-.

NOECKER, Norbert L(lewellyn), *Plant physiology and pathology.* Hesper, Ia, 8/6/06. A.B, Iowa State Teachers Col, 30; M.S, Iowa State Col, 32; Ph.D, Wisconsin, 37. Notre Dame 39-, asst. prof, 42-.

NOLAND, Jerre L(ancaster), *Biochemistry.* Richmond, Ky, 2/14/21. B.S, Purdue, 42, M.S, 44; Ph.D, Wisconsin, 49.

NOLAND, Lowell E(van), *Protozoology.* Lee, Ind, 7/15/96; m. 23, c. 2. B.A, DePauw, 17; M.A, Wisconsin, 21, Ph.D, 24. Ind. high schs, 17-20; Wisconsin, 25-, prof, 35-.

NORDHEIM, L(othar) W(olfgang), *Theoretical physics* (starred). Munich, Germany, 11/17/99; nat, 41; m. 35, c. 1. Ph.D, Gottingen, 23. Purdue, prof, 35-37; Duke, prof, 37-.

NORDSIECK, H(erbert Henry), *Physical chemistry.* Hamilton, O, 1/22/13; m. 38, c. 2. B.S, Butler, 34; M.S, A. & M. Col. (Tex.), 36; Ph.D, Cornell, 39. Procter & Gamble, 39-, in chg. phys. chem. res, 47-.

NORRIS, E(dgar) H(ughes), *Pathology.* LaGrange, Ind, 10/19/93; m. 32, c. 6. B.S, Minnesota, 15, M.A, 16, M.B, 18, M.D, 19. Wayne, prof, 38-45.

NORRIS, Richard O(wen), *Chemistry.* Trinidad, Colo, 11/10/13; m. 47. B.S, Notre Dame, 37, M.S, 38, Ph.D, 40. Sinclair Ref. Co, project leader, 44-.

NORTHRUP, H(arry) B(enedict), *Metallurgy.* Akron, O, 8/27/86. E.M, Ohio State, 11. Diamond Chain & Mfg. Co. (Indianapolis), ch. metal, 20-25, cons, 25-31; Pa. State Col, dir. mineral indust, 31-.

NORTON, Frederick Henry, *Organic chemistry.* Denver, Colo, 1/2/09; m. 35, c. 4. A.B, Grinnell Col; M.S, Purdue, 33, Ph.D, 36. Dow Chem. Co, 36-.

NORWOOD, C(harles) J(oseph), *Geology, Mining.* New Harmony, Ind, 9/17/53, died, 27. Geol. Surv, 74-80; Kentucky, dean col. mining eng, 02-27.

NOTHMANN, G(erhard) A(dolf), *Mechanical engineering.* Berlin, Germany, 12/9/21, nat, 44; m. 43, c. 2. B.S, M.S, Purdue, 42; Ph.D, Cornell, 48. Armour Res. Found, 48-.

NOTTINGHAM, Frank O(liver), Jr, *Electrical engineering.* Portsmouth, Va, 2/10/02; m. 34. E.E, Virginia, 24; S.M.E.E, Mass. Inst. Tech, 37; Ph.D, Purdue, 46. Purdue, instr. to asst. prof, 36-48; Ga. Inst. Tech, assoc. prof, 48-.

NOTTINGHAM, Wayne B(uckles), *Physics* (starred). Tipton, Ind, 4/17/99; m. 22, c. 1. B.S, Purdue, 20; M.A, Princeton, 26, Ph.D, 29. Mass. Inst. Tech, 31-, prof, 42-.

NOVAK, Arthur F(rancis), *Chemistry.* Baltimore, Md, 10/25/17; m. 46. B.S, Maryland, 37; M.S, Alabama, 40; Ph.D, Purdue, 47. Florida, 47-, assoc. prof, 49-.

NOYES, Bradford, Jr, *Physics.* Charleston, W. Va, 95; m. 21, c. 2. B.S, West Virginia, 20; M.S, Cornell, 22, Ph.D, 24. Taylor Instrument Co, 24-43; P. R. Mallory & Co. (Indianapolis), 44-47; Butler, assoc. prof, 48-.

NOYES, Harry Alfred, *Chemistry, Bacteriology.* Marlborough, Mass, 7/7/90; m. 13, c. 3. B.S, Mass. Col, 12, M.S, 14. Purdue, exp. sta, 13-18; Texas Gulf Sulphur Co, 23-32; Arthur D. Little, Inc, 35-39; Kingsbury Ordnance Depot (Ind.), 41-42.

NOYES, William A(lbert), *Chemistry* (starred). Independence, Ia, 11/6/57, died, 41; m. 84, c. 4. A.B, B.S, Grinnell, 79, A.M, 82; Ph.D, Hopkins, 82. Rose Poly. Inst, prof, 86-03; U. S. Bur. Standards, 03-07; Illinois, prof, 07-27. Nichols medal, 08; Natl. Acad. Sci; Ind. Acad. Sci. (pres, 94).

NOYES, W(illiam) Albert, Jr, *Chemistry* (starred). Terre Haute, Ind, 4/18/98; m. 21, c. 1. A.B, Grinnell Col, 19; Dr. Sc, Paris, 20. Chicago, 22-29, asst. prof, 23-29; Rochester, 38-. Natl. Acad. Sci; Chem. Soc. (pres, 47).

NUGENT, T(homas) J(ohn), *Plant pathology.* Elnora, Ind, 4/30/10; m. 46. B.S.A, Purdue, 33, M.S, 37. Va. Truck Exp. Sta, 46-.

NURNBERGER, Carl E(lroy), *Biophysics.* Atherton, Ind, 9/11/00; m. 27, c. 2. A.B, Wabash Col, 23; A.M, Minnesota, 25, Ph.D, 32. Wayne, asst. prof, 40-.

NUSBAUM, Ralph Emerson, *Physics.* Middlebury, Ind, 1/4/04; m. 37, c. 1. A.B, DePauw, 26; M.S, Illinois, 29, Ph.D, 32. Gen. Motors, res, 32-47; N. Am. Aviation Corp, res. optics, 47-.

NUTT, Cyrus, *Mathematics.* Trumbull Co, O, 9/4/14, died, 75. A.B, Allegheny Col, 31. Indiana Asbury (DePauw), prof, 57-60; Indiana, pres, 60-75.

NUTTING, Lee, *Chemistry.* Berkeley, Calif, 9/4/09. B.S, California, 31; A.M, Stanford, 32, Ph.D, 34. Ind. Ordnance Works, ch. chem, 41-48.

O'BANION, Elmer E(lwood), *Chemistry.* Madison, Ind, 6/3/13; m. 41, c. 2. A.B, Indiana, 34, A.M, 35, Ph.D, 42. Prairie View Col. (Tex.), prof, 39-. (A Negro.)

O'BANNON, Loran Shellive, *Chemistry.* Elizabeth, Ind, 12/7/10; m. 33, c. 1. A.B, Indiana, 32; M.S, Louisville, 34. Servel Inc. (Ind.), 34-35; Battelle Mem. Inst, res. eng, 42-46, asst. super, 46-.

OBERLIN, Kermit W(illiam), *Psychology.* Butler, Ind, 8/18/02; m. 30, c. 2. A.B, Wittenberg Col, 27; A.M, Harvard, 30, Ph.D, 35. Delaware, 30-43, asst. prof, 39-43; West Elec. Co, personnel counselor, 45-49.

OBLAD, Alex Golden, *Physical chemistry.* Salt Lake City, Ut, 11/26/09; m. 33, c. 2. B.A, Utah, 33, M.A, 34; Ph.D, Purdue, 37. Standard Oil Co. Ind, 37-42; Houdry Process Corp, dir. res, 47-.

O'BRIEN, Cecil Starling, *Ophthalmology.* Manhattan, Ind, m. 39, c. 2. B.S, Cent. Nor. Col, 07; M.D, Indiana, 13. Iowa, prof, 25-.

O'BRIEN, Morrough P(arker), *Engineering.* Hammond, Ind, 9/21/02; m. 31, c. 2. B.S, Mass. Inst. Tech, 25. Purdue, 25-27; California, 28-, ch. dept, 37-43, dean col. eng, 43-.

OCKERBLAD, Nelse F(rederick), *Urologic surgery.* N. Y. C, 11/27/81; m. 07. B.S, Hanover Col, 14; M.D, Kansas, 16. Kansas, sch. med, 20-, prof. clin. urol, 36-.

ODLE, John W(illiam), *Mathematics.* Tipton, Ind, 7/23/14; m. 37, c. 2. B.S, Michigan, 37, M.S, 38, Ph.D, 40. U. S. Naval Ordnance Test Sta, head math. div, 46-.

OESTER, Y(vo) T(homas), *Pharmacology.* West Brooklyn, Ill, 12/21/08; m, c. 3. B.S, Notre Dame, 31, M.S, 33; Ph.D, Chicago, 39, M.D, 43. Loyola, 38-39, prof, 47-.

OESTING, Ralph B(eck), *Biochemistry.* Evanston, Ill, 5/18/10. A.B, Earlham Col, 31; Ph.D, Chicago, 35. Oscar Mayer & Co. ch. chem, 42-.

OESTLUND, Oscar W(illiam), *Entomology.* Attica, Ind, 9/27/57, died, 48. A.B, Augustana Col, 79, A.M, 87, Ph.D, 00. Minnesota, 91-48, asst. prof, 06-26, emer. prof, 26-48.

OFFENHAUER, C(harles) M(artin), *Metallurgy.* Middletown, O, 8/28/15; m. 45. B.S, Purdue, 37; M.S, Lehigh, 39. Union Carbide & Carbon Res. Labs, 40-, group leader, 45-.

OFFENHAUER, Robert D(wight), *Organic chemistry.* Sandusky, O, 6/24/18; m. 42, c. 2. A.B, DePauw, 40; Ph.D, Wisconsin, 44. Socony-Vacuum Labs, 48-.

OHLINGER, Leo A(rthur), *Civil engineering.* Chicago, Ill, 1/7/07; m. 31, c. 1. B.S, Armour Inst. Tech, 27. Standard Oil Co. Ind, res, 34-46; Northrop Aircraft, Inc. (Calif.), 46-.

OHLROGGE, A(lvin) J(ohn), *Soils.* Chilton, Wis, 9/19/15; m. 44, c. 1. B.S, Wisconsin, 37; Ph.D, Purdue, 43. Purdue, 42-, asst. prof, 45-.

OHLSON, Margaret A(lexander), *Nutrition.* Chicago, Ill, 5/5/01. A.B, State Col. Wash, 23; M.S, Iowa, 30, Ph.D, 34. Indiana, instr, 29-32; Iowa State Col, assoc. prof, 35-.

O'KEEFE, Andrew E(llis), *Chemistry.* Newark, N. J, 3/4/12; m. 42, c. 2. B.S, Notre Dame, 33; M.S, Poly. Inst. Brooklyn, 38. Squibb Inst. Med. Res, 39-, assoc, 45-.

OLDROYD, T. S. (Ida Shepard), *Paleontology.* Goshen, Ind, 11/25/57, died, 40. Stanford, curator geol. museum, 14-27.

OLDS, C(arl) D(ouglas), *Mathematics.* Wanganui, New Zealand, 5/11/12; m. 37, c. 2. B.A, Stanford, 36; M.A, 37, Ph.D, 43. Purdue, instr, 40-45; San Jose State Col, 45-.

OLIN, S(tephen) M(unro), *Chemistry.* Mansfield, O, 12/23/19; m. 42, c. 2. A.B, DePauw, 41; M.A, Ohio State, 43, Ph.D, 48. Miles Lab. (Elkhart, Ind.), org. chem, 48-.

OLIPHANT, John W(illiam), *Medicine.* Fort Branch, Ind, 7/6/01; m. 37, c. 3. M.D, Indiana, 31. U. S. Pub. Health Serv, 32-.

OLIPHANT, J(oseph) F(rederick), *Physiology.* Farmersburg, Ind, 7/31/06. A.B, Wabash Col, 28; Ph.D, Hopkins, 35. Stanford, 35-, assoc. prof, 44-.

OLIVE, Edgar W(illiam), *Botany* (starred). Lebanon, Ind, 4/1/70; m. 98, c. 2. B.S, Wabash Col, 93, M.S, 95; M.A, Harvard, 97, Ph.D, 02. Wabash Col, instr, 93-95; S. Dak. State Col, prof. and state bot, 07-12; Brooklyn Bot. Garden (N. Y.), curator, 12-20; income tax work (Indianapolis), 20-46.

OLSEN, Esten B(arclay), *Chemical engineering.* Oak Park, Ill, 12/20/13; m, c. 1. B.S, Purdue, 35. Am. Cyanamid Co, develop. chem, 36-41, prod. mgr, 45-.

OLSEN, Norbert H., *Chemical engineering.* Indianapolis, Ind, 2/15/17; m. 41, c. 2. B.S, Purdue, 40. Dupont Co, chem. eng, 40-.

OLSON, M(alven) L(eonard), *Mechanical engineering.* St. Paul, Minn, 8/12/12; m. 41, c. 1. B.M.E, Minnesota, 36. Linde Air Prods. Co. (Indianapolis), res. eng, 36-.

OLSON, Walter T., *Chemistry.* Royal Oak, Mich, 7/4/17; m. 43. A.B, DePauw, 39; B.S, Case Sch. Appl. Sci, 40, Ph.D, 42. Natl. Advisory Comm. Aeronaut, res. chem, 42-45, ch. combustion branch, 45-.

O'MALLEY, Martha Alice, *Public health.* Waukon, Ia, 8/2/09. M.D, Iowa, 33; M.P.H, Harvard, 41, D.P.H, 46. State Bd. Health, Ind, dir. div. hosp. and institutional serv, 46-.

ONCLEY, Lawrence, *Chemistry.* Hopkinsville, Ky, 8/16/77; m. 08, c. 4. A.B, DePauw, 07; M.S, Chicago, 13. Ind. high schs, 07-09; Southwest. Col. (Kans.), 18-47.

O'NEAL, Claude E(dgar), *Botany.* Coatesville, Ind, 1/29/84; m. 13, c. 2. A.B, Indiana, 11, A.M, 13, Ph.D, 22. Ohio Wesleyan, 13-, prof, 22-.

O'NEAL, Russell D., *Physics.* Columbus, Ind, 2/15/14; m. 2nd, 48; c. 2. A.B, DePauw, 36; Ph.D, Illinois, 41. Eastman Kodak, 45-.

OPDYKE, David F(ranklin), *Physiology.* Montpelier, O, 9/11/15; m. 44, c. 2. B.S, Heidelberg Col, 37; Ph.D, Indiana, 42. Indiana, instr, 42-43; West. Reserve, 44-, assoc. prof, 49-.

ORDEMAN, G(eorge) Fred(erick), *Chemistry.* Frederick, Md, 11/9/92. B.S, Washington and Lee, 12; Ph.D, Hopkins, 16. Standard Oil Co. Ind, res. chem, 19-, supt. light oils dept, 34-43, asst. gen. supt, 43-.

ORNDOFF, John D(elbert), *Physics.* Waynesburg, Pa, 6/18/15; m. 43, c. 2. B.S, Waynesburg Col, 37; M.S, Colorado, 40; Ph.D, Purdue, 44. Purdue, instr, 43-45; Los Alamos Sci. Lab, California, 46-.

ORR, Jack Edward, *Pharmaceutical chemistry.* Delphi, Ind, 12/11/18; m. 42, c. 1. B.S, Purdue, 40; Ph.D, Wisconsin, 43. Reg. phar. (Ind.), 40-44; Ohio State, 43-47, asst. prof, 46-47; Utah, 47-.

ORTON, C(layton) R(oberts), *Plant pathology* (starred). East Hardwick, Vt, 4/1/85; m. 11, c. 3. B.S, Vermont, 09; M.S, Purdue, 15; Ph.D, Columbia, 24. Purdue, exp. sta, 10-13; West Virginia, 29-49, prof. and exp. sta, 29-38, dir. exp. sta. and dean col. agr, 38-49.

OSBORN, E(lburt) F(ranklin), *Petrology.* Winnebago Co, Ill, 8/13/11; m. 39, c. 2. B.A, DePauw, 32; M.S, Northwestern, 34; Ph.D, Calif. Inst. Tech, 38. Carnegie Institution, geophys. lab, 38-42; Pa. State Col, prof. geochem, 46-.

OSBORN, Gerald, *Organic chemistry.* Tangier, Ind, 4/11/03; m. 27, c. 2. A.B, Mich. State Nor. Col, 27; M.S, Michigan, 29, Ph.D, 39. West. Mich. Col. Educ, prof, 39-.

OSBORN, H(enry) L(eslie), *Zoology.* Newark, N. J, 7/5/57, died, 40. A.B, Wesleyan, 78; Ph.D, Hopkins, 84. Purdue, prof, 84-87; Hamline, 87-.

OSBURN, O(iven) L(loyd), *Bacteriology.* Elwood, Ind, 4/7/93; m. 22. B.S, Colo. State Col, 22; M.S, Iowa State Col, 30, Ph.D, 34. Standard Brands, Inc, 44-, super. labs, 48-.

O'SHEA, Harriet E(astabrooks), *Psychology, Education.* Buffalo, N. Y, 95. A.B, Wisconsin, 16, A.M, 17; Ph.D, Columbia, 30. Purdue, assoc. prof, 31-.

OSKAMP, Joseph, *Pomology.* Cincinnati, O, 1/22/88. B.S, Missouri, 12. Purdue, exp. sta, 12-20; Cornell, 21-41; retired.

OSTRANDER, Allen R(oys), *Geology.* Samokov, Bulgaria, 6/14/07. B.S, Hamilton Col, 29; M.S, Wisconsin, 31; Ph.D, Washington (St. Louis), 38. DePauw, instr, 39-41; Missouri, asst. prof, 43-.

OSWALD, John Wieland, *Plant pathology.* Minneapolis, Minn, 10/11/17; m. 45, c. 2. A.B, DePauw, 38; Ph.D, California, 42. California, asst. prof, 46-.

OTTO, George H(erman), *Economic geology.* Brookville, Ind, 4/24/08; m. 35, c. 1. S.B, Chicago, 31, Ph.D, 42. Armour Res. Found, geol, 45-.

OUGHTON, Charles D(avid), *Physics.* Concord, Mich, 7/28/18; m. 43, c. 2. A.B, DePauw, 40; M.A, Michigan, 41. Battelle Mem. Inst, 45-, asst. super. graphic arts res, 46-.

OVERBECK, Clarence J(acob), *Physics.* Holland, Ind, 3/14/01; m. 28, c. 2. A.B, Indiana, 25, M.A, 26; Ph.D, Northwestern, 31. Northwestern, instr. to prof, 27-.

OVERMAN, J(ames) R(obert), *Mathematics.* Bedford, Ind, 4/15/88; m. 17. A.B, Indiana, 09; A.M, Columbia, 14, Ph.D, Michigan, 30. Ind. high schs, 09-12; Bowling Green State, prof, 14-48, dean, 30-48.

OVERMAN, John P(aul), *Chemistry.* Straughn, Ind, 11/15/18. B.S, Indiana, 40, M.A, 41. Natl. Lead Co, res. chem, 47-.

OVERMAN, O(liver) R(alph), *Chemistry.* Windfall, Ind, 4/15/86; m. 15, c. 2. A.B, Indiana, 10, A.M, 11; Ph.D, Cornell, 17. Illinois, 19-, prof, 39-.

OVERMAN, Richard R(oll), *Biology, Physiology.* Richmond, Ind, 11/10/16; m. 42, c. 2. A.B, DePauw, 39; M.A, Princeton, 42, Ph.D, 43. Tennessee, 45-, assoc. prof, 48-.

OVERPECK, J(ohn) C(lay), *Agronomy.* Rosedale, Ind, 6/3/95; m. 2nd, 37; c. 1. B.S.A, Purdue, 17; M.S, Ohio State, 20. N. Mex. Col, exp. sta, prof, 23-.

OVITZ, Frank K(eehn), *Chemical engineering.* Mineral Point, Wis, 5/17/82, died, 44. B.S, Michigan, 05. Standard Oil Co. Ind, 20-44.

OWEN, D(avid) A(llen), *Biology.* Worthington, Ind, 12/11/52, died, 31. A.B, Franklin Col, 78, A.M, 81. Franklin, prof, 79-09; retired, 09-31.

OWEN, David Dale, *Chemistry, Geology.* Lanark, Scotland, 6/24/1807, died, 60; m. 37, c. 4. To New Harmony, Ind, 1828; state geol, Ind, 37-46; state geol, Ky, 5 years. (Son of Robert Owen.)

OWEN, Richard, *Chemistry, Geology.* Lanark, Scotland, 1809, died, 90. To New Harmony, Ind, 1828. Second state geol, Ind; Indiana, prof. nat. sci, 64-79; retired, 79-90. (Son of Robert Owen.)

OWENS, C(harles) E(lmer), *Botany.* Clay Co, Ind, 11/26/77. A.B, Indiana, 10, A.M, 11; Ph.D, Wisconsin, 34. Ind. pub. schs, 00-09; Ore. State Col, 12-47.

PACKARD, C(lyde) M(onroe), *Entomology.* Cummington, Mass, 1/28/89. B.S, Mass. Col, 13; M.S, California, 25. Purdue, exp. sta, entom, 13-.

PADDOCK, Russell G(urney), *Mechanical engineering.* Connersville, Ind, 2/14/93; m. 22, c. 1. B.S, Purdue, 20, M.S, 23. Arkansas, prof, 31-.

PADGETT, A(lgie) R(oss), *Organic chemistry.* Morocco, Ind, 4/20/11; m. 33, c. 3. B.S, Purdue, 32, M.S, 36, Ph.D, 36. Humble Oil & Ref. Co, res. chem, 37-.

PAFF, George H(ugo), *Histology, Embryology.* Beaver Falls, Pa, 3/3/05; m. 28, c. 2. B.S, Notre Dame, 27; A.M, West. Reserve, 30, Ph.D, 33. Notre Dame, instr. biol, 28-29, 33-35; L. I. Col. Med, 35-, assoc. prof, 43-.

PAGE, Irvine H(einly), *Medicine.* Indianapolis, Ind, 1/7/01; m. A.B, Cornell, M.D, 26. Lilly Clinic (Indianapolis), dir, 37-45; Cleveland Clinic, dir, 45-.

PAGE, J(ames) M(orris), *Chemistry.* Cobham, Va, 7/18/01. B.S, Virginia, 24. Standard Oil Co. Ind, res. chem, 24-38, technol, 38-.

PAINE, Mrs. Robert (Mary Esther Trueblood), *Mathematics.* Richmond, Ind, 5/6/72, died, 29. Ph.B, Earlham Col, 93; Ph.M, Michigan, 96. Earlham, instr, 97-99; California, 15-.

PAINTER, H(enry) R(aymond), *Entomology.* Big Springs, Kan, 9/10/88; m. 23, c. 1. B.S, Okla. A. & M. Col, 12, M.S, 16. Purdue, exp. sta, 18-.

PALMER, C(harles) Mervin, *Botany.* Chester, Pa, 8/25/00; m, c. 2. B.S, Pa. State Col, 22, M.S, 25; Ph.D, Indiana, 40. Butler, 25-50, assoc. prof. to prof, 41-50.

PALMER, Irving A(llston), *Metallurgy.* New Waverly, Ind, 5/20/66, died, 36. B.S, Lafayette Col, 87, M.S, 90. Colo. Sch. Mines, prof, 17-36.

PAPISH, Jacob, *Chemistry.* Russia, 8/4/87. B.S, Valparaiso, 10; A.M, Indiana, 17; Ph.D, Cornell, 21. Valparaiso, prof, 10-14; Indiana, instr, 16-18; Purdue, 18-19; Cornell, 19-, prof, 29-.

PARFITT, Elliott Hill, *Bacteriology.* Brooklyn, N. Y, 7/2/97; m. 21, c. 2. B.S, Toronto, 18; M.S, Purdue, 24; Ph.D, Iowa State Col, 34. Purdue, 21-40, prof, 26-40; Evap. Milk Assn, dir. sanitation, 40-.

PARK, Byron J(ames), *Anatomy.* Muncie, Ind, 10/7/25. A.B, DePauw, 46. Indiana, instr, 47-.

PARK, John K(enzler), *Chemical engineering.* Bozeman, Mont, 7/29/11; m. 37. B.S, Purdue, 33. Owens-Corning Fiberglas Corp, 38-, mgr. res, 47-.

PARK, Thomas V(aughn), *Chemistry.* Chicago, Ill, 7/21/17; m. 41, c. 2. B.S, Purdue, 39. Eli Lilly & Co, res. chem, 39-.

PARKER, Dorothy (Inez), *Botany.* Marion Co, Ind, 1/23/10. B.S, Butler, 32; M.A, Cincinnati, 34, Ph.D, 36. St. Mary's Col. (Ind.), head dept. biol, 39-42; Notre Dame, asst. curator herebarium, 44-45.

PARKER, Kenneth G(ardner), *Plant pathology.* Little York, Ind, 3/22/06; m. 39. A.B, DePauw, 28; Ph.D, Cornell, 34. Cornell, 34-, assoc. prof, 46-.

PARKER, Paul E., *Biology.* New Providence, Ia, 2/10/99; m. 19, c. 1. A.B, Ariz. State Teachers Col, 34; M.A, Arizona, 39, Ph.D, 49. Marion Col, 39-, assoc. prof, 46-.

PARKER, Vincent E(veland), *Physics.* Kuala Lumpur, F. Malay S, 9/18/14; m. 38, c. 3. A.B, Evansville Col, 36; Ph.D, Indiana, 40. Cent. Nor. Col. (Ind.), 40-41; Delaware, 41-, prof, 49-.

PARKHURST, John A(delbert), *Astronomy* (starred). Dixon, Ill, 9/24/61, died, 25; m. 88. S.B, Rose Poly. Inst, 86, S.M, 97. Yerkes Observ, 98-25.

PARKS, John M(orris), *Metallurgy.* Lafayette, Ind, 7/16/17; m, c. 2. B.S, Purdue, 39; M.Met.E, Rensselaer Poly. Inst, 41, Ph.D, 42. Armour Res. Found, super. res. non-ferrous metal, 46-.

PARKS, Lloyd M(cClain), *Pharmaceutical chemistry.* Scottsburg, Ind, 3/21/12; m. 40, c. 1. B.S, Purdue, 33, M.S, 36; Ph.D, Wisconsin, 38. Wisconsin, 38-, prof, 45-.

PARKS, L(ytle) R(aymond), *Chemistry.* Aurora, Ind, 4/13/90; m. 15, c. 3. B.S, Purdue, 12; M.S, Pa. State Col, 14; Ph.D, Cornell, 28. Pa. State Col, 13-, prof, 27-.

PARNELL, Norman E(mory), *Chemistry.* Bridgeport, Ind, 8/31/13; m. 41, c. 3. A.B, Indiana, 35; M.S, Carnegie Inst. Tech, 36; Ph.D, Cornell, 46. Dupont Co, 46-.

PARRISH, Charles I(thamer), *Chemistry.* Shelbyville, Ind, 1/9/07; m. 34, c. 1. B.S, Illinois, 30; M.S, Virginia, 31; Ph.D, Northwestern, 33. Goodrich Co, res. super, 43-.

PARSHALL, Clarence M(erton), *Physics.* Washington, Pa, 4/19/14; m. 35, c. 2. B.S, Washington & Jefferson Col, 35, M.S, 37; Ph.D, Purdue, 41. U. S. Rubber Co, res, 41-.

PASCHAL, Franklin Cressey, *Psychology.* Chillicothe, Ill, 2/6/90, died, 47. A.B, DePauw, 11; A.M, Pennsylvania, 16, Ph.D, 18. Ind. Reformatory, dir. res, 12-16; Arizona, 19-27, prof, 21-27; Vanderbilt, 27-, dean, 29-35.

PATBERG, J(esse) B(ernard), *Physical chemistry.* Huntingburg, Ind, 1/9/17; m. 46, c. 2. A.B, Evansville Col, 38; Ph.D, Illinois, 42. Standard Oil Develop. Co, 42-.

PATCH, L(awrence) H(enry), *Entomology.* Wenham, Mass, 3/15/96; m. 28, c. 1. B.S, Mass. Col, 19. U. S. Dept. Agr. (Ind.), 44-.

PATRICK, T(racy) M(inard), *Chemistry.* Kirksville, Mo, 8/1/17; m. 41, c. 3. A.B, Denison, 39; M.S, Purdue, 41, Ph.D, 43. Monsanto Chem. Co, 42-.

PATTERSON, G(uillermo), *Chemistry.* Panama, 2/13/84. B.C, Cooper Union Col, 10; Chem.E, N. Y. U, 11; M.S, Notre Dame, 11, Ph.D, 12. Notre Dame, asst. prof, 11-12; Panama and C. Z, 20-, Judge, Fifth Circuit Ct, 38-.

PATTISON, John N(orwood), *Chemistry.* Cedar Rapids, Ia, 6/1/19; m. 41, c. 3. B.S, West Virginia, 41; Ph.D, Purdue, 48. Battelle Mem. Inst, res. eng, 48-.

PATTON, John B(arratt), *Geology.* Marion, Ind, 7/1/15; m. 41, c. 3. A.B, Indiana, 38, A.M, 40. Indiana, 47-, asst. prof, 48-.

PATTON, John T(homas), *Chemistry.* Jonesboro, Ark, 1/30/17; m. 45. B.S, Ark. State Col, 38; Ph.D, Purdue, 47. Wyandotte Chems. Corp, res. chem, 47-.

PAYNE, E(lmer) C(urry), *Chemistry.* West Lebanon, Ind, 7/3/00; m. A.B, Butler, 22; Ph.D, Cincinnati, 31. Indianapolis Water Co, 23-24; Butler, asst. prof, 32-35; Sylvania Elec. Prods. (Ind.), develop. chem, 43-.

PAYNE, F(ernandus), *Zoology* (starred). Shelbyville, Ind, 2/13/81; m. 10, c. 1. A.B, Indiana, 05, A.M, 06; Ph.D, Columbia, 09. Indiana, 09-51, prof, 19-, dean grad. sch, 27-47. Am. Soc. Zool. (pres, 31); Ind. Acad. Sci. (pres, 32).

PAYNE, J(ohn) H(oward), *Chemistry.* Hartford City, Ind, 06; m. 32, c. 3. A.B, Butler, 27; A.M, Cincinnati, 28, Ph.D, 30. Hawaii, asst. prof, 32-40; Pacific Chem. & Fertilizer Co. (Honolulu), dir. res, 40-48.

PAYNE, John H(oward), *Chemistry.* Newark, N. J, 12/7/17; m. 42, c. 2. B.S, Geo. Washington, 40, M.S, 41; Ph.D, Purdue, 47. Monsanto Chem. Co, 44-.

PAYNE, Kenyon T(homas), *Agronomy.* Amherst, Mass, 1/3/18; m. 42, c. 2. B.Sc, Kans. State Col, 39; M.Sc, Nebraska, 41; Ph.D, Minnesota, 48. Purdue, asst. prof, 48-.

PEABODY, M(ary) K(ent), *Mathematics.* Ft. Wayne, Ind, 1/16/17. B.A, Vassar Col, 39; M.A, Yale, 42, Ph.D, 44.

PEACOCK, N(eal) D(ow), *Horticulture.* Kokomo, Ind, 1/27/97. B.S, Purdue, 19; M.S, Tennessee, 23; Ph.D, Mich. State Col, 37. Tennessee, instr. to prof, 23-.

PEAKE, John Spencer, *Inorganic and physical chemistry.* Louisville, Ky, 8/4/09; m. 31, c. 1. A.B, Indiana, 31, Ph.D, 35; M.S, Carnegie Inst. Tech, 32. Dow Chem. Co, res. chem, 35-47; Indiana, assoc. prof, 47-.

PEARCE, D(ennis) W(iffen), *Chemistry.* Lamont, Alta, Can, 4/24/08, nat, 41; m. 33, c. 2. B.A, British Columbia, 29, M.A, 30; Ph.D, Illinois, 34. Purdue, 35-47, assoc. prof, 41-47; Gen. Elec, Hanford Div, 47-48, lab. ch, 48-.

PEARCY, G(eorge) Etzel, *Geography.* Greencastle, Ind, 5/2/05; m. 37. B.E, California L. A, 31; M.A, Clark, 32, Ph.D, 40. Pennsylvania, instr, 35-39; Alabama, asst. prof, 39-42; Trans-World Airlines, system geog, 43-50; U. S. Dept. State, 50-.

PEARSON, Leonard, *Veterinary science.* Evansville, Ind, 8/17/68. B.S, Cornell, 88; V.M.D, Pennsylvania, 90. Pennsylvania, prof, 91-09, dean, 97-09.

PEARSON, N(athan) E(verett), *Zoology.* Amboy, Ind, 12/12/95; m. 24, c. 2. A.B, Indiana, 21, A.M, 23, Ph.D, 26. Butler, 26-, prof, 38-. Ind. Acad. Sci. (v. p, 46).

PEARSON, Raymond A(llen), *Agriculture.* Evansville, Ind, 4/9/73, died, 39; m, c. 2. B.S, Cornell, 94, M.S, 99. U. S. Dept. Agr, 95-02; Cornell, prof, 03-08; Iowa State, pres, 12-26; Maryland, pres, 26-35.

PECK, Franklin B(ruce), *Clinical medicine.* Remington, Ind, 9/26/98; m. 24, c. 2. A.B, Indiana, 20; M.D, Jefferson Med. Col, 23. Eli Lilly & Co, 36-, assoc. dir. med. div, 40-.

PEDLOW, J(ohn) Thomas, *Chemistry.* Red Bank, N. J, 8/31/02; m. B.S, Pa. State Col, 25, Ph.D, 34; M.S, Rutgers, 26. DePauw, instr, 28-32; Maine, 36-, prof, 47-.

PEFFER, H(arry) C(reighton), *Chemical engineering.* Enon Valley, Pa, 8/15/73, died, 34. B.S, Pa. State, 95, M.S, 08. Purdue, head sch. chem. eng, 11-34.

PEIRCE, George J(ames), *Physiology* (starred). Manila, P. I, 3/13/68; m. 97, c. 3. S.B, Harvard, 90, A.M, Ph.D, 94. Indiana, asst. prof, 95-97; Stanford, 97-, prof, 10-33.

PENCE, R(oyce) O(wen), *Milling industry.* Sidney, Ind, 6/11/96. B.S, Kans. State Col, 24, M.S, 30, F.M.E, 35. Kans. State Col, assoc. prof, 27-.

PENROD, E(stel) B(urdell), *Physics.* North Manchester, Ind, 8/20/90; m. 21, c. 1. B.S, M.E, Purdue, 15, M.S, 20; M.M.E, Cornell, 23. Purdue, instr, 19-20; Kentucky, prof, 46-.

PEOPLES, Robert S(cott), *Metallurgical engineering.* Richmond, Ind, 11/15/10; m. B.S, Ohio State, 33. Battelle Mem. Inst, res. eng, 34-41, asst. super, 46-.

PEPPER, Paul M(ilton), *Mathematics.* Kendallville, Ind, 5/16/09; m. 34, c. 1. A.B, Indiana, 31, A.M, 32; Ph.D, Cincinnati, 37. Notre Dame, 38-49, assoc. prof, 43-49.

PERETTI, Ettore A(lex), *Metallurgy.* Butte, Mont, 4/5/13; m. 37, c. 2. B.S, Mont. Sch. Mines, 34, M.S, 35; D.Sc, Wuerttemberg Inst. Tech, Germany, 36. Notre Dame, assoc. prof, 46-49, prof, 49-.

PERISHO, Ellwood C(happelle), *Geology.* Westfield, Ind, 62, died, 35. B.S, Earlham Col, 87, A.M, 00; M.S, Chicago, 95. S. Dakota, prof, dean col. arts and sci, state geol, 03-14; S. Dak. State Col, pres, 14-19.

PERKINS, George, *Metallurgy.* La Grange, Ind, 3/20/17; m. B.S, Purdue, 37, Ph.D, 40. Standard Oil Co. Ind, 41-42; Reynolds Metals Co, 44-, tech. serv. dir, 47-.

PERKINS, Janet Russell, *Botany.* Lafayette, 5/20/53, died, 33. A.B, Wisconsin, 01; Ph.D, Heidelberg, 99. An expert on flora of the Philippines, Jamaica.

PERKINS, Samuel Elliott, III, *Ornithology.* Indianapolis, Ind, 5/8/78; died, 41. A.B, Wabash Col, 00; LL.B, Indiana, 02. Ind. Audubon Soc. (pres.). Author of hundreds of popular articles on birds.

PERKINS, Wendell LeRoy, *Geography.* Nashville, Mich, 10/5/87, died, 40. A.B, Michigan, 11, A.M, 19. Indiana State Teachers Col, asst. prof, 24-40.

PERLIS, Sam, *Mathematics.* Maywood, Ill, 4/18/13; m. 39, c. 2. B.S, Chicago, 34, M.S, 36, Ph.D, 38. Purdue, 46-, asst. prof, 47-.

PERLSTEIN, David, *Bacteriology.* Newark, N. J, 10/6/14; m. 2nd, 42, c. 2. A.B, N. Y. U, 36; M.Sc, Phila. Col. Phar, 39, Sc.D, 41. Schenley Distillers Corp. (Ind.), sr. bact, 42-46; Rona Labs, pres, 47-.

PERREY, J(oseph) I(rving), *Civil engineering.* Ft. Wayne, Ind, 8/20/04. B.S, Purdue, 27. U. S. Geol. Surv, water resources branch, 27-29, asst. eng, 29-34, assoc. eng, 34-41.

PERRY, Robert Dawson, *Mathematics.* Lockhart, Tex, 8/8/00. B.S, S.W. Tex. State Teachers Col, 23, A.M, Colo. State Col, 25; B.Mus, Chicago, 26; Ph.D, Peabody Col, 32. Purdue, asst. prof, 25-31; West. Ky. State Teachers Col, prof, 32-40; Texas A. & I. Col, prof, 42-.

PERSHING, Alvin Victor, *Physics*. Elnora, Ind, 11/15/00; m. 22, c. 3. A.B, Indiana, 28, Ph.D, 38; M.S, Michigan, 33. Okla. A. & M. Col, assoc. prof, 46-.

PETERING, Harold G(eorge), *Chemistry*. La Porte, Ind, 10/8/10; m. 39, c. 2. S.B, Chicago, 34; Ph.D, Wisconsin, 38. Mich. State Col, exp. sta, 38-41; Dupont Co, 41-45; Upjohn Co, 45-.

PETERS, Carl W(ade), *Chemical engineering*. Lynchburg, Va, 12/30/19. B.Ch.E, Virginia, 41; Ch.E, Princeton, 42. Standard Oil Co. Ind, 42-, group leader, 47-.

PETERS, J(esse) Jerome, *Radiology*. Ft. Wayne, Ind, 8/17/95; m. 30. B.S, Indiana, 18, M.D, 20. U. S. Veterans Hosp. (Tuskegee), ch. radiol, 26-.

PETERS, Sister Mary Fridiana, *Educational psychology*. Rhineland, Germany, 5/27/95. A.B, Ind. State Teachers Col, 28, A.M, 32; Ph.D, Indiana, 37. Ind. high schs, 28-31; St. Francis Col. (Ind.), 31-, dean instruction, 37-, dir, 40-.

PETERSEN, L(awrence) Howard, *Physics*. Wichita, Kans, 1/4/04; m. 32; c. 2. A.B, Friends, 30; M.S, Kans. State Col, 31; Ph.D, Indiana, 33. Wallace & Tiernan Sales Corp, 36-.

PETERSON, Eric L(ee), *Physics*. Shelley, Idaho, 12/24/03; m. 31, c. 2. B.S, Oregon, 28, M.S, 31; Ph.D, Purdue, 36. Purdue, instr, 36-42; California, Los Alamos (N. Mex.), leader res. group, 46-.

PETERSON, Gordon E(lmer), *Speech*. Danville, Ill, 10/14/13; m. 36, c. 2. B.A, DePauw, 35; M.A, Louisiana, 37, Ph.D, 39. Bell Tel. Labs, 44-.

PETERSON, John B(ooth), *Soil chemistry*. Salem, Ore, 7/18/05; m. 30, c. 2. B.S, Ore. State Col, 28; M.S, Iowa State Col, 29, Ph.D, 36. Purdue, head dept, 48-.

PETERSON, Leroy E(ric), *Physics*. Anaconda, Mont, 7/22/17; m. 41, c. 2. A.B, Oberlin Col, 38; M.S, Notre Dame, 40, Ph.D, 42. Notre Dame, instr, 42-45; Am. Viscose Corp, sect. leader, 46-.

PETRAUSKAS, Alex(ander) A(nselmus), *Physics*. Lithuania, 2/24/08, nat, 25. B.S, Notre Dame, 31, M.S, 38; Ph.D, Mass. Inst. Tech, 41. Notre Dame, 41-, asst. prof, 45-.

PETRY, Edward Jacob, *Botany*. Guadenhutten, O, 6/24/80, died, 39. B.S, Ohio State, 07; M.S, Purdue, 14; Ph.D, Michigan State Col, 25. Purdue, 11-18, asst. prof, 16-18; Coe Col, prof, 31-39.

PETRY, Loren C(lifford), *Botany* (starred). New Paris, O, 9/22/87; m. 15, c. 2. B.S, Earlham Col, 07; M.S, Chicago, 11, Ph.D, 13. Cornell, prof, 25-.

PETRY, Robert L(owell), *Physics*. New Paris, O, 11/1/97; m. 26. A.B, Earlham Col, 19; B.S, Haverford Col, 20; Ph.D, Princeton, 25. Univ. of South, prof, 29-.

PETTY, Ben(jamin) H(arrison), *Engineering*. Hayes Co, Nebr, 10/12/88; m. 13, c. 1. B.S, Purdue, 13. Purdue, 20-, prof, 33-.

PEYTON, Floyd A(very), *Dentistry*. Charlestown, Ind, 2/2/05; m. 34, c. 2. A.B, Indiana, 28; M.S, Mich. Col. Mines, 29; D.Sc, Michigan, 33. Michigan, 35-, prof, 48-.

PFANSTIEL, R(obert), *Chemistry*. Morning View, Ky, 2/7/86. B.S, Valparaiso, 10; A.M, Pennsylvania, 20, Ph.D, 22. Dupont Co, Grasselli Div, res. chem, 28-.

PFISTER, R(udolf) J(ohn), *Analytical chemistry*. Indianapolis, Ind, 5/6/11; m. 34, c. 5. A.B, Butler, 32; M.A, Oberlin Col, 36; Ph.D, Pa. State Col, 42. Pa. State Col, asst. prof, 42-45.

PFLAUM, Daniel J(oseph), *Physical and organic chemistry*. Cedar Rapids, Nebr, 2/24/10; m. 35, c. 5. A.B, Creighton, 31; M.S, Notre Dame, 32, Ph.D, 34. Atomic Energy Comn.—Manhattan Dist, 45-47, dept. ch. Oak Ridge Lab, 47-49, ch. Wash, D. C, 49-.

PHELAN, G(erald) B(ernard), *Psychology*. Halifax, N. S, 8/25/92. St. Mary's Col. (N. S.); S.T.B, Catholic, 15; M.A, St. Francis Xavier. (Can.), 18; Ph.D, Louvain, 24. Notre Dame, dir. medieval inst, 46-.

PHELPS, Willard B(rooks), *Geology*. Pepperell, Mass, 2/28/10; m. 36, 47. B.S, New Hampshire, 34; M.A, Ohio State, 36. DePauw, instr, 42-44; Missouri, asst. prof, 44-.

PHILBRICK, Shailer S(haw), *Geology*. Columbia, Mo, 5/11/08; m. 36, c. 3. A.B, DePauw, 30; Ph.D, Hopkins, 33. Army Engineers, 35-, Ohio River Div, prin. geol, 49-.

PHILBROOK, George E(dwin), *Organic chemistry*. N. Y. C, 5/2/16; m. 41, c. 1. B.S, Maine, 38, M.S, 40; Ph.D, Cincinnati, 42. Standard Oil Co. Ind, 42-46.

PHILIPS, A(llen) G(riffith), *Poultry husbandry*. West Chester, Pa, 1/5/86. B.S.A, Kans. State Col, 07. Purdue, prof, 10-26; Allied Mills, 26-.

PHILLIPS, Alfred E(dward), *Civil engineering*. Rouses Point, N.Y, 6/18/63, died, 31. A.B, C.E, Union Col, 87, A.M, 90. Purdue, prof, 87-94; Armour, prof, 99-31.

PHILLIPS, A(rthur) W(illiam, Jr.), *Food technology*. Claremont, N. H, 9/25/15. B.S, Notre Dame, 39, M.S, 41; Sc.D, Mass. Inst. Tech, 47. Notre Dame, res. assoc, 43-45; Mass. Inst. Tech, 47-.

PHILLIPS, B(enjamin) A(ustin), *Physical chemistry.* El Paso, Tex, 8/22/12. A.B, Texas Col. Mines, 34; A.M, Texas, 35, B.S, Ph.D, 39. Servel Inc. (Evansville), res. eng, 39-.

PHILLIPS, George R(obert), *Forestry.* Branchville, N. J, 7/17/00; m. 23, c. 1. B.S, Mich. State Col, 22. Asst. state forester, Ind, 23-26; state forester, Okla, 26-36; U. S. Dept. Agr, 39-46.

PHILLIPS, L(awrence) R(oy), *Chemistry.* Marlette, Mich, 5/3/17; m. 40, c. 4. B.S, Alma Col, 38; Ph.D, Indiana, 42. Florida, 46-, asst. prof, 47-.

PHILLIPS, Melba Newell, *Physics.* Hazelton, Ind, 2/1/07. A.B, Oakland City Col, 26; M.A, Battle Creek Col, 28; Ph.D, California, 33. Ind. high schs, 26-27; Brooklyn Col, 38-, asst. prof, 44-.

PHILLIPS, Ralph W., *Dentistry.* Farmland, Ind, 1/12/18; m. 43, c. 1. B.S, Indiana, 40. Indiana, 40-, asst. prof, 44-.

PHILLIPS, R(ees) Lloyd, *Bacteriology.* Brazil, Ind, 1/28/07. B.S, Purdue, 32, M.S, 36. Commercial Solvents Corp, 28-30; Biochem. Res. Found, 36-.

PHILLIPS, Warren E(dmund), *Chemical engineering.* Indianapolis, Ind, 2/2/06; m. 30, c. 3. B.S, Purdue, 27. B. F. Goodrich Co, 27-, res. super, 43-.

PHINNEY, Arthur John, *Botany, Geology.* Geouga Co, O, 8/29/50, died, 42. Ind. Acad. Sci. for 58 years, from its start. Surveys of Delaware, Randolph, Grant and Rush Counties published by Ind. Geol. Surv, 82-85.

PHINNEY, John Arthur, *Chemical engineering.* Manchester, N. H, 12/9/15; m. 42, c. 2. B.S, Mass. Inst. Tech, 38, M.S, 39. Standard Oil Co. Ind. (Whiting), 39-43; Stanolind Oil & Gas Co, res. group super, 43-.

PIANFETTI, John A(ndrew), *Organic chemistry.* Sawyerville, Ill, 7/19/07; m. 40, c. 2. B.S, Illinois, 30; M.A, Wisconsin, 33; Ph.D, Purdue, 41. Westvaco, res. chem, 40-.

PIATT, Jean, *Anatomy.* Marion, O, 9/22/09; m. 37. B.S, Butler, 32; M.A, Haverford Col, 33; Ph.D, Yale, 37. Pennsylvania, 41-, asst. prof, 44-.

PICKETT, Edward E(rnest), *Organic chemistry.* Indianapolis, Ind, 5/27/20. B.S, Purdue, 42; Ph.D, Ohio State, 48. U. S. Navy, res. found, 44-48; Missouri, asst. prof. spectros, 48-.

PICKETT, F(ermen) L(ayton), *Botany.* Bakers Corner, Ind, 1/10/81. A.B, Indiana, 10, A.M, 12, Ph.D, 15. Indiana, critic techer, 09-13, instr, 10-14; State Col. Wash, 14-, prof, 18-.

PIELEMEIER, W(alter) H(enry), *Physics.* Freelandville, Ind, 2/6/89; m. 17, c. 3. A.B, Michigan, 16, M.A, 19, Ph.D, 28. Pa. State Col, 20-, prof, 35-.

PIEPER, Charles J(ohn), *Science education.* Avilla, Ind, 5/30/87. A.B, Wabash Col, 10; A.M, Columbia, 27. N. Y. U, 28-, prof, 32-.

PIERCE, George O(tis), *Public health.* Indianapolis, Ind, 4/10/02; m. 26, c. 1. B.S, Purdue, 23; M.S, Minnesota, 40. In East Chicago, Ind, 24-26; Minnesota, 36-, assoc. prof, 43-.

PIERCE, Ogden R(oss), *Chemistry.* Ft. Wayne, Ind, 2/5/21. B.S, Purdue, 43, Ph.D, 47. Purdue, Air Materiel Command Fellow, 48-.

PIERSMA, H(enry) D(irk), *Bacteriology.* Grand Rapids, Mich, 7/2/08. A.B, Calvin Col, 31; Ph.D, Purdue, 41. Purdue, instr, 36-39; Lederle Labs, Inc. (N. Y.), 39-.

PIERSON, Donald, *Anthropology.* Indianapolis, Ind, 9/8/00; m. 29. A.B, Col. Emporia, 27; A.M, Chicago, 33, Ph.D, 39. Brazil, (S. A.), 39-; Smithsonian Inst, anthrop, 45-.

PIERSON, Earl, *Chemistry.* Martin, Mich, 7/11/14; m. 41, c. 2. A.B, Kalamazoo Col, 36, M.S, 37; Ph.D, Purdue, 41. Merck & Co. (N. J.), 40-44, group leader (Va.), 44-.

PIKE, F(rank) H(enry), *Physiology* (starred). Aurora, Ill, 1/20/76; m. 07, c. 1. A.B, Indiana, 03; Ph.D, Chicago, 07. Columbia, 11-41, assoc. prof, 16-41; retired.

PIKL, Josef M(artin), *Organic chemistry.* Grafenstein, Austria, 10/5/04; m. 41. Ph.D, Vienna, 30. Dupont Co, (Ind.), 36-.

PINSON, Ernest A(lexander), *Aviation medicine and physiology.* Henderson Co, Ky, 1/2/13. A.B, DePauw, 35; Ph.D, Rochester, 40. U. S. War Dept, res. physiol, 39-.

PITTS, Robert F(ranklin), *Physiology.* Indianapolis, Ind, 10/24/08; m. 36, c. 2. B.S, Butler, 29; Ph.D, Hopkins, 32; M.D, N. Y. U, 38. Syracuse, prof, 46-.

PLANK, Charles J(oseph), *Chemistry.* Calcutta, India, 11/8/15; m. 43, c. 2. B.S, Purdue, 36, M.S, 39, Ph.D, 42. Socony-Vacuum Oil Co, 41-, sr. chem, 43-.

PLATZMAN, Robert L(eRoy), *Physical chemistry, Physics.* Minneapolis, Minn, 8/23/18; m. 47. B.S, Chicago, 37, M.S, 40, Ph.D, 42. Purdue, assoc. prof, 48-.

PLENTL, Albert A(dolph), *Chemistry, Medicine.* Cairo, Egypt, 10/31/13, nat, 42; m. Ing. Chem, Tech. Hochschule, 33; A.M, Princeton, 35; Ph.D, Columbia, 40; M.D, Cornell, 48. Lilly Lab. Clin. Res. (Indianapolis), 41-44; Ralph L. Evans Assocs. (N. Y.), proj. leader pharmaceut, 44-48.

PLETCHER, Donald Eugene, *Organic chemistry*. Goshen, Ind, 6/6/15; m. 38, c. 2. A.B, Manchester Col, 37; Ph.D, Ohio State, 41. Dow Chem. Co, 41-.

PLETTA, Dan Henry, *Applied mechanics*. South Bend, Ind, 12/31/03; m. 31, c. 2. B.S, Illinois, 27, C.E, 38; M.S, Wisconsin, 31. Va. Poly. Inst, 32-, prof, 41-.

PLICE, M(ax) J(ennings), *Soils*. Ashland Co, O, 2/9/94; m. 36. B.S.A, Purdue, 18, M.S.A, 25; Ph.D, Cornell, 32. Purdue, res, 20-27; Okla. A. & M. Col, assoc. prof, 38-.

PLUMB, C(harles) S(umner), *Animal husbandry*. Westfield, Mass, 4/21/60, died, 39. B.S, Mass. Col, 82. Purdue, prof, dir. exp. sta, 91-02; Ohio State, prof, 02-30.

PLUNKETT, Donald J(oseph), *Comparative anatomy*. Cadillac, Mich, 4/20/06; m. 34, c. 3. B.S, Notre Dame, 29; M.S, Illinois, 37. Notre Dame, assoc. prof, 32-.

PLUNKETT, Orda A(llen), *Botany*. Advance, Ind, 8/4/97; m. 24. B.A, Wabash Col, 20; M.A, Illinois, 22, Ph.D, 24. California L. A, 25-, asst. prof, 29-42, assoc. prof, 42-.

PLUNKETT, Roy J(oseph), *Organic chemistry*. New Carlisle, O, 6/26/10. A.B, Manchester Col, 32; M.S, Ohio State, 33, Ph.D, 36. Dupont Co, 36-, ch. chem, 39-.

POHLAND, Albert, *Organic chemistry*. Latrobe, Pa, 1/23/19; m. 44, c. 1. B.S, St. Vincent Col, 40; M.S, Pa. State Col, 41, Ph.D, 44. Eli Lilly & Co, 44-.

POHLMAN, Augustus G(rote), *Anatomy*. Buffalo, N. Y, 2/21/79, died, 50. M.D, Buffalo, 00. Indiana, 04-13, prof, 08-13; St. Louis, 13-32; South. California, assoc. prof, 38-50.

POLEY, W(ellington) E(rnest), *Poultry husbandry*. Waterbury, Conn, 4/19/07. B.S, Conn. State Col, 29; M.S, N. C. State Col, 30; Ph.D, Purdue, 34. S. Dak. State Col, prof, 34-.

POLLARD, Cash Blair, *Chemistry*. Hannibal, Mo, 2/22/00; m, c. 1. A.B, Wm. Jewell Col, 21; M.S, Purdue, 23, Ph.D, 30. Purdue, instr, 23-30; Florida, 30-, prof, 37-.

POLLEY, J(oseph) C(rawford), *Mathematics*. Cheshire, Conn, 8/17/97; m. 23, c. 2. A.B, Yale, 21; Ph.D, Cornell, 29. Wabash Col, prof, 29-.

POLLNOW, Francis John, *Chemical engineering*. St. Louis, Mo, 7/3/21. B.S, Notre Dame, 42. Vestal Labs, Inc, 42-, res. dir, 44-47, v. p, 48-.

POLYE, William R(oland), *Physics*. N. Y. C, 12/12/14; m. 41, c. 2. B.S, St. Lawrence, 37; M.S, Notre Dame, 39. Bendix Aviation Corp. (South Bend), phys, 40-.

POORMAN, A(lfred) P(eter), *Mechanics*. Altamont, Ill, 2/13/77; m. 10, 36, c. 2. B.S, Illinois, 07; C.E, A.B, Colorado, 09. Purdue, 09-, prof, 22-47.

POPE, F(rank) B(igelow), *Organic chemistry*. Franklin, Pa, 6/13/12; m. 37, c. 1. A.B, Ohio State, 33; A.M, Indiana, 36, Ph.D, 40. B. F. Goodrich Co, 36-.

POPE, Seth (Alison), *Mycology*. Fargo, N. Dak, 10/15/11; m. 39, c. 3. A.B, DePauw, 36; Ph.D, Cornell, 42. Schenley Lab. (Ind.), sr. mycol, 44-47.

PORSCHE, Francis W(illiam), *Chemistry*. Chicago, Ill, 6/26/19; m. 47. B.S, Chicago, 41. Standard Oil Co. Ind, 41-, group leader res, 47-.

PORTER, Albert B(rown), *Physics*. Indianapolis, Ind, 3/16/64, died, 09. B.S, Purdue, 84. High sch. (Richmond, Ind.), 84-91; Armour Inst, prof, 94-03.

PORTER, Bennet A(llen), *Entomology*. Northampton, Mass, 7/12/92. B.S, Mass. Col, 14, Ph.D, 21. U.S. Dept. Agr, Bur. Entom. (Vincennes, Ind.), 17-.

PORTER, Charles L(yman), *Plant pathology, Physiology*. Mackinaw, Ill, 2/22/89. B.S, Ill. Wesleyan, 11; A.B, Illinois, 13, A.M, 21, Ph.D, 23. Purdue, assoc. prof. to prof, 23-. Ind. Acad. Sci. (pres, 49).

PORTER, Donald H(enry), *Mathematics*. Medina Co, O, 11/29/07; m. 30, c. 2. A.B, B.S, Marion Col, 29; A.M, Indiana, 30. Marion Col, 30-, assoc. prof, 38-.

PORTER, Galen, *Chemistry*. Burnettsville, Ind, 10/19/15; m. 40, c. 1. A.B, DePauw, 37; M.S, Purdue, 39. Union Carbide & Carbon Corp, res. lab, 39-.

PORTER, J(ames) P(ertice), *Psychology*. Hillsboro, Ind, 9/23/73. A.B, Indiana, 98. A.M, 01; Ph.D, Clark, 05. Indiana, instr, 00-03; Ohio (Athens), prof, 22-43.

PORTER, John N(orman), *Bacteriology, Parasitology*. Fairfield, Ia, 9/29/15; m. 46. B.S, Purdue, 35, M.S, 36; Ph.D, Harvard, 40. Am. Cyanamid Co, Lederle Labs. Div, mycol, 43-.

PORTER, John W(illard), *Biochemistry, Genetics*. Mukwonago, Wis, 6/12/15; m. 41, c. 3. B.S, Wisconsin, 38, Ph.D, 42. Purdue, 42-, asst. prof, 47-.

POTE, F(rank) W(alter), *Physics*. Stroudsburg, Pa, 2/18/83. B.S, Rose Poly. Inst, 06; M.S, Ohio State, 29. Tufts Col, 12-, prof, 18-.

POTTEBAUM, Sister M. Edward, *Organic chemistry*. Dubuque Co, Ia, 5/28/03. A.B, Iowa, 33, M.S, 34; Ph.D, Notre Dame, 42. Briar Cliff Col, 34-.

POTTER, Andrey Abraham, *Engineering.* Vilna, Russia, 8/5/82, nat, 06; m. 06, c. 2. S.B, Mass. Inst. Tech, 03. Purdue, exp. sta, 13-20, dean eng, 20-. Ind. Eng. Soc. (pres, 23); Soc. Mech. Eng. (pres, 32); Soc. Eng. Educ. (pres, 24); Eng. Council (pres, 36-38).

POTTER, F(rederick) C(lyde), *Pathology.* Wyoming Co, Pa, 7/10/82. M.D, Medico-Chirurg. Col. Phila, 09. Cent. Ind. Hosp. Insane, path, 13-18; U. S. Army, Med. Corps (Ft. Benjamin Harrison, Ind.), ch, lab, 40-.

POTZGER, John Ernest, *Botany.* Presque Isle Co, Mich, 7/31/86; m. 47. A.B, Butler, 27, M.A, 31; Ph.D, Indiana, 32. Butler, 32-, prof, 48-. Cent. Assn. Sci. & Math. Teachers (pres, 48). Pollen analysis; forest surveys; plant ecology; micro-climate.

POWELL, Horace Mann, *Virology.* Valparaiso, Ind, 8/5/94; m. 17, c. 2. A.B, Ind. State Nor. Sch, 14; Sc.D, Hopkins, 23. Ind. pub. schs, 14-20; Eli Lilly & Co, bact, 25-.

POWER, Maxwell E(lliott), *Invertebrate zoology.* Hamilton Co, Ind, 10/2/13. A.B, Indiana, 36; M.S, Oklahoma, 38; Ph.D, Yale, 42. Kenyon Col, asst. prof, 46-.

POWERS, E(dward) Lawrence, *Genetics.* Columbia, S. C, 12/30/15; m. 39, c. 4. B.S, Col. Charleston, 38; Ph.D, Hopkins, 41. Notre Dame, 41-46, asst. prof, 42-46; Argonne Natl. Lab, biol, 46-.

POWERS, Grover Francis, *Pediatrics.* Colfax, Ind, 8/12/87; m. 16, c. 1. B.S, Purdue, 08; M.D, Hopkins, 13. Yale, 21-, prof, 27-.

POWERS, John Michael, *Organic chemistry.* Houston, Tex, 11/15/14; m. 42, c. 3. B.S, Notre Dame, 37. Humble Oil & Ref. Co, 38-, sect. head, 48-.

PRATHER, W(illiam) Dwight, *Chemistry.* Vincennes, Ind, 8/6/11; m. 44, c. 1. A.B, Indiana, 32; M.A, Columbia, 38. Ind. high schs, 32-45; Monsanto Chem. Co, 45-.

PRATT, Harold P(arker), *Animal ecology.* Union Mills, Ind, 2/18/06; m. 29. A.B, West. State Col. Colo, 31, M.A, 33; Ph.D, Colorado, 38. U. S. Soil Conserv. Serv, 39-.

PREER, John R(andolph), Jr. *Zoology.* Ocala, Fla, 4/4/18; m. 41, c. 1. B.S, Florida, 39; Ph.D, Indiana, 47. Pennsylvania, 47-.

PRENTICE, Burr N(orman), *Forestry.* Berkshire, N. Y, 8/1/88. A.B, Syracuse, 12, M.F, 13. Purdue, 14-, prof, 26-.

PRENTICE, Donald Bishop, *Mechanical engineering.* Hartford, Conn, 4/27/89; m. 12, c. 3. Ph.B, Yale, 10, M.E, 14; A.M, Lafayette Col, 27. Rose Poly. Inst, pres, 31-48.

PRESENT, R(ichard) D(avid), *Physics.* N. Y. C, 2/5/13; m. 43, c. 2. B.S, Col. City N. Y, 31; A.M, Harvard, 32, Ph.D, 35. Purdue, instr, 35-40; Manhattan proj, Columbia, 43-46; Tennessee, assoc. prof, 46-.

PRESSEY, Sidney L(eavitt), *Psychology.* Brooklyn, N. Y, 12/28/88; m. 33. A.B, Williams Col, 12; A.M, Harvard, 15. Ph.D, 17. Indiana, 17-21, asst. prof, 21; Ohio State, 21-, prof, 26-.

PRICE, Irene, *Mathematics.* Parr, Ind, 1/16/02. A.B, Indiana, 26, A.M, 27, Ph.D, 32. Indiana, instr, 26-29, Wis. State Teachers Col. (Oshkosh), prof, 29-44.

PRICE, J(acob) Waide, *Chemistry.* Nashville, Tenn, 10/19/06. B.S, Butler, 28; A.M, Cincinnati, 29, Ph.D, 31. Western Reserve, instr. biochem, 40-.

PRICE, Melvin, *Engineering.* Lafayette, Ind, 9/14/77; m. 06, c. 3. B.S, Purdue, 97, E.E, 02; A.M, Columbia, 04. Purdue, prof, 36-37, 46-47; Bendix Aviation Corp. (Ind), eng, 39-42.

PRICE, R(alph) H(enry), *Chemical engineering.* Parsons, Kans, 2/26/95. A.B, Baker, 17; B.S, Mass. Inst. Tech, 21. Standard Oil Co. Ind, 29-34; Pan-Am. Ref. Corp, dir. res, 34-.

PRICE, W(alter) A(llen), *Entomology, Botany.* Columbus, O, 2/25/87; m. 29. B.S.A, Ohio State, 13, M.S, 16. Purdue, 14-29, assoc. prof, 20-29; Kentucky, prof, 29-.

PRICKETT, Paul S(mith), *Bacteriology.* Cleburne, Tex, 9/21/99; m. 26, c. 1. B.S, A. & M. Col. Tex, 22; M.S, Cornell, 24, Ph.D, 28. Mead Johnson & Co. (Evansville), ch. bact, 29-.

PRITCHARD, J(ames) E(dward), *Chemistry.* Swaledale, Ia, 1/28/22; m. 42, c. 1. B.A, Iowa, 42, M.S, 43; Ph.D, Purdue, 48. Phillips Petrol. Co, res, 48-.

PROBST, Albert Henry, *Agronomy.* Lawrenceburg, Ind, 1/25/12; m. 39, c. 2. B.S.A, Purdue, 36, M.S, 38, Ph.D, 48. Purdue, exp. sta, in chg. soybean invests, 36-.

PROCTOR, Paul Dean, *Geology.* B.A, Utah, 42; M.A, Cornell, 43; Ph.D, Indiana, 49. Indiana, assoc. prof, 50-.

PRONKO, N(icholas) H(enry), *Psychology.* McKees Rocks, Pa, 2/28/08; m. 30, c. 2. A.B, Geo. Washington, 39; M.A, Indiana, 41, Ph.D, 44. Indiana, instr, 40-45; Wichita, prof, 47-.

PROUI, Edward George, *Chemistry.* Hatfield, Mass, 12/8/80, died 25. B.S, Mass. Agr. Col, 03; M.S, Purdue, 09. Purdue, exp. sta, fertilizer control, 07-25; state chem, Ind. 18-25.

PRUITT, Clarence M(artin), *Chemistry.* Birdseye, Ind, 1/30/98; m. 20. A.B, Indiana, 19, M.A, 25; Ph.D, Columbia, 35. Evansville Col, 37-38; Okla. A. & M. Col, asst. prof. to prof, 38-; ed. *Science Education.*

PRYOR, Marvin J., *Physics.* Osseo, Minn, 5/3/03. A.B, Marion Col, 26; A.M, Amherst Col, 29. Houghton Col, asst. prof. to prof, 29-.

PUGH, David G(raham), *Radiology.* Rushville, Ind, 9/12/09; m. 35, c. 3. B.S, Indiana, 30, M.D, 32. Mayo Clinic, 38-, assoc, 42-.

PULLIAM, Francis M(cConnell), *Mathematics.* Indianapolis, Ind. 5/29/13. B.A, Illinois, 37, M.A, 38, Ph.D, 47. Kentucky, asst. prof, 47-.

PULSKAMP, C(ornelius) A(loysius), *Physics.* Franklin Co, Ind, 9/19/98. A.B, Ind. State Teachers Col, 23; Ph.D, California, 29. Marin Jr. Col. (Calif.), instr, 27-.

PURCELL, E(dward) M(ills), *Physics.* Taylorville, Ill, 8/30/12. B.S, Purdue, 33; A.M, Harvard, 35, Ph.D, 38. Harvard, instr, 38-.

PURDUE, A(lbert) H(omer), *Geology.* Warrick Co, Ind, 3/29/61, died, 17. A.B, Stanford, 93. Arkansas, prof, 96-17; state geol, Ark, 07-17.

PUTNAM, George R(ockwell), *Engineering.* Davenport, Ia, 5/24/65. B.S, Rose Poly. Inst, 90, M.S, 95. U. S. Coast & Geod. Surv, 90-35, comr. lighthouses, 10-35.

PUTNAM, H(amilton) W(allace), *Chemistry.* Ft. Morgan, Colo, 7/6/05; m. 29, c. 2. A.B, Denver, 29; Kans. State Teachers Col, 31. Igleheart Bros. (Ind.), ch, chem, 35-39, mgr. labs. Ind, 44-47; Cent. Soya Co. (Ind.), res. chem, 47-48.

PUTNAM, Russell C(aldwell), *Electrical engineering.* Jacksonville, Ill, 3/27/98; m. 23, c. 2. A.B, Butler, 19; B.S, Colorado, 23, E.E, 28; M.S, Case Sch. Appl. Sci, 33. Case, 25-, assoc. prof, 35-49, prof, 49-.

PYLE, H(enry) Randolph, *Mathematics.* Poplar Ridge, N. Y, 10/26/04. A.B, Whittier Col, 26; A.M, California, 28, Ph.D, 31. Earlham Col, 36-40, prof, 38-40; Whittier Col, prof, 40-.

PYLE, W(illiam) H(enry), *Psychology.* Carmi, Ill, 2/27/75, died, 45. A.B, Indiana, 98; Ph.D, Cornell, 09. Wayne, 33-, dir. grad. sch, 38-.

PYLE, Willian R(ussell), *Physics.* Rockford, Ind, 10/7/96; m. 23, c. 1. B.S, Purdue, 21; M.S, Ohio State, 26, Ph.D, 30. Wilmington Col, 21-, prof, 38-.

QUACKENBUSH, F(orrest) W(ard), *Agricultural chemistry.* Melrose, Wis, 8/18/07; m. 37, c. 2. B.S, Wisconsin, 32, Ph.D, 37. Purdue, head dept, 43-; state chem. and seed comr, Ind, 43-.

QUAGLIANO, James V(incent), *Inorganic chemistry.* N. Y. C, 11/9/15. B.S, Poly. Inst. Brooklyn, 38, M.S, 40; Ph.D, Illinois, 46. Notre Dame, asst. prof, 48-.

QUINN, B(ayard) E(lmer), *Mechanics.* Philadelphia, Pa, 5/10/15; m. 45, c. 1. B.S, Drexel Inst. Tech, 37; M.S, Cornell, 42, Ph.D, 45. Purdue, assoc. prof. 46-.

QUINN, Edmond J(ohn) *Nutrition.* Antwerp, N. Y, 7/12/86; m. 17, c. 3. B.S, Notre Dame, 11; Ph.D, Columbia, 25. Ind. Geol. Surv, 11-14; Merck & Co. (N. J.), vitamin specialist, 37-.

QUINN, John Frederick, *Organic chemistry.* Pittsfield, Mass, 12/19/12; m. 44, c. 2. A.B, Indiana, 35; M.S, Col. Holy Cross, 36; Ph.D, Purdue, 42. Monsanto Chem. Co, res. chem, 41-.

QUINN, Robert B(yron), *Physics.* Valparaiso, Ind, 2/6/07; m. 42, c. 1. A.B, Indiana, 29, A.M, 30, 32; Ph.D, Chicago, 41. Rose Poly. Inst, 30-31; Naval Res. Lab, 42-.

RABER, B(enedict) F(rederick), *Mechanical engineering.* Farmington, Ia, 10/8/82; m. B.S, Purdue, 07. Purdue, instr, 07-13; California, 15-, prof, 17-.

RABER, Oran (Lee), *Plant physiology.* Wolcottville, Ind, 1/14/93, died, 40. A.B, Indiana, 12; A.M, Harvard, 15, Ph.D, 20. Univ. Travel Assn, prof, 27-40.

RACZYNSKI, W(alter) (Arthur), *Chemistry.* Chicago, Ill, 7/2/14; m. 42, c. 2. B.S, Illinois, 39; Ph.D, Indiana, 43. Hercules Powder Co, res. chem, 43-.

RADIMER, K(enneth) J(ohn), *Inorganic and analytical chemistry.* Clifton, N. J, 3/31/20. B.S, Mass. Inst. Tech, 42, Ph.D, 47. Indiana, asst. prof, 48-.

RADSPINNER, John A(sa), *Physical chemistry.* Vincennes, Ind, 5/14/17; m. 42, c. 1. B.S, Richmond, 37; M.S, Va. Poly. Inst, 38; D.Sc, Carnegie Inst. Tech, 42. Pan-Am. Ref. Corp, res. chem, 42-.

RAELSON, Verner John, *Meteorology.* Springfield, Mo, 8/17/18; m. 42. B.A, Valparaiso, 40, LL.B, 42. Valparaiso, instr. math, 46-.

RAFFERTY, M(ichael) A(lphonse), *Biochemistry, Pharmacology.* Weston, W. Va, 12/24/03, died, 44. Ph.C, West Virginia, 29; M.D, Rush, 37. Miles Labs, Inc. (Elkhart, Ind.), asst. med. dir, 41-44.

RAIFORD, Theodore E(rnest), *Mathematics.* Ivor, Va, 7/25/89. B.S, Earlham Col, 14; A.M, Michigan, 24, Ph.D, 33. Purdue, 19-23; Michigan, 23-.

RAILSBACK, O(ra) L(ee), *Physics.* Windom, Minn, 1/12/96; m. 26, c. 3. A.B, Indiana, 23, A.M, 24, Ph.D, 37. Ball State Col, 24-25; East. Ill. State Col, prof, 25-.

RAINIER, E(dwin) T(hornton), *Chemistry.* Auburn, Ind, 2/19/04; m. 29, c. 3. A.B, DePauw, 26; M.S, Cincinnati, 27, Ph.D, 29. U. S. Rubber Co. (N. J.), 29-.

RALL, Waldo, *Physics.* Los Angeles, Calif, 3/20/24. B.A, Washington (St. Louis), 44; M.S, Indiana, 48, Ph.D, 49. Yale, instr, 49-.

RAMLER, Otto J(oseph), *Mathematics.* Richmond, Ind, 6/12/87; m. 15, c. 1. A.B, Canisius Col, 10, A.M, 12; Ph.D, Catholic, 18. Catholic 13-, prof, 23-.

RAMSAY, Andrew Jackson, *Histology, Embryology.* Angola, Ind, 12/10/07; m. 34, c. 2. A.B, DePauw, 30; Ph.D, Cornell, 34. Jefferson Med. Col, 37-, prof, 48-.

RAMSEY, G(len) B(laine), *Plant pathology.* Eagletown, Ind, 5/21/89; m. 18. A.B, Indiana, 13, M.A, 14; Ph.D, Chicago, 25. U. S. Dept. Agr, Chicago, 19-.

RAMSEY, Helen J(oyce), *Physiology.* Richmond, Ky, 9/2/16. B.S, Purdue, 37, M.S, 38; Ph.D, Duke, 41. Columbia, res, 42-.

RAMSEY, R(olla) R(oy), *Physics.* Morning Sun, O, 4/11/72; m. 97, c. 1. A.B, Indiana, 95, A.M, 98; Ph.D, Cornell, 01. Indiana, 03-42, prof, 19-42. Ind. Acad. Sci. (pres, 30).

RANDALL, Walter C(lark), *Physiology.* Akeley, Pa, 12/12/16; m. 43, c. 2. A.B, Taylor, 38; M.S, Purdue, 40, Ph.D, 42. St. Louis, 43-, assoc. prof, 49-.

RANGER, Richard H(owland), *Radio engineering.* Indianapolis, Ind, 6/12/89; m. 23, c. 1. B.S, Mass. Inst. Tech, 11. Radio Corp. Am, design eng, 20-30; Rangertone, Inc, pres, 30-.

RANKIN, A(ndrew) W(illiam), *Engineering.* B.S, Purdue, 35, M.S, 35. Gen. Elec, elec. eng, 36-44, mech. eng, 48-.

RANKIN, David, *Organic chemistry.* Monmouth, Ill, 2/14/13. B.S, Monmouth Col, 36; M.S, Ph.D, Purdue, 41. Penick and Ford, Ltd, res. chem, 41-.

RANKIN, W(illiam) H(oward), *Plant pathology.* Richmond, Ind, 4/3/88; m. 11, c. 3. A.B, Wabash Col, 10; Ph.D, Cornell, 14. Cornell, 13-19, asst. prof, 14-19; N. Y. exp. sta. (Geneva), 22-34; N. Y. State Dept. Agr. & Mkts, 34-.

RANSOM, Ja(me)s H(arvey), *Chemistry.* Chazy, N. Y, 9/21/61, died, 40. B.S, Wabash Col, 90, A.M, 93; Ph.D, Chicago, 99. Purdue, 00-19, prof, 08-19; Millikin, prof, 20-30.

RAPER, John R(obert), *Cryptogamic botany.* Lexington, N. C, 10/3/11; m. 36, c. 1. A.B, North Carolina, 33, M.A, 36; M.A, Ph.D, Harvard, 39. Indiana, 41-43; Chicago, assoc. prof, 46-.

RASANEN, Paul R(obert), *Pharmacy.* Aberdeen, Wash, 4/15/18; m. 1. B.Sc, State Col. Wash, 40; M.Sc, Nebraska, 42; Ph.D, Purdue, 48. Abbott Labs, res, 49-.

RATLIFF, R(yland) F(letcher), *Physics.* Marion, Ind, 1/6/58, died, 47. A.B, Indiana, 00, A.M, 03. Cent. Nor. Col, prof, 01-20; Mo. Sch. Mines, assoc. prof, 20-37; Indiana, 05-18, asst. prof, 17-18.

RAUDEBAUGH, Robert John, *Metallurgical engineering.* Dayton, O, 4/8/10; m. 33. B.S, Carnegie Inst. Tech, 32; Ph.D, Purdue, 45. Purdue, instr, 39-44; Ga. Inst. Tech, prof, 48-.

RAVDIN, I(sidor) S(chwaner), *Surgery.* Evansville, Ind, 10/10/94. B.S, Indiana, 16; M.D, Pennsylvania, 18. Pennsylvania, 18-, prof, 29-.

RAWLES, Thomas Howard, *Mathematics.* Bloomington, Ind, 12/12/97; m. 36, c. 2. A.B, Indiana, 19, M.A, 25; Ph.D, Yale, 27. Yale, 27-35, asst. prof, 29-35; Colo. Col, prof, 35-.

RAWLES, William P(ost), *Geology.* Bloomington, Ind, 5/28/00. A.B, Indiana, 22, A.M, 26; Ph.D, Wisconsin, 30. Tri-Continental Corp, 36-40; Cons. geol, 45-.

RAY, Bronson S(ands), *Surgery.* New Albany, Ind, 1/4/04; m. 33, c. 2. B.S, Franklin Col, 24; M.D, Northwestern, 28. Cornell, 35-, prof, 48-.

RAY, Kenneth W(ilbert), *Chemistry metallurgy.* Worthington, Ind, 9/20/97; m. 22, c. 1. B.A, Indiana, 21, M.A, 22, Ph.D, 26. Gen. Refineries, Inc, dir. res, 34-.

RAY, W(illiam) Winfield, *Mycology, Plant pathology.* Grabill, Ind, 1/31/09; m. 37, c. 3. B.S, Northwestern, 31, M.S, 33; Ph.D, Cornell, 38. Nebraska, prof, 47-.

READ, C(arlyle) D(ean), *Chemical engineering.* Griswold, Ia, 8/5/04; m. 29, c. 2. B.S, Iowa, 25, M.S, 26. Standard Oil Co. Ind, 26-29; British Am. Oil Co. (Toronto), 35-47.

READE, Maxwell O(ssian), *Mathematics.* Philadelphia, Pa, 4/11/16; m. 43, c. 1. B.S, Brooklyn Col, 36; M.A, Harvard, 37; Ph.D, Rice Inst, 40. Purdue, 42-46; Michigan, asst. prof, 46-.

REAGAN, Charles A(rthur), *Mathematics.* Mauckport, Ind, 12/22/80; m. 03, c. 8. B.S, Moores Hill Col, 16; A.M, Kansas, 26. Hanover Col, prof, 19-23; Friends, prof, 26-.

REAGAN, F(ranklin) P(earce), *Anatomy.* Sheridan, Ind, 6/20/90. A.B, Indiana, 13; Ph.D, Princeton, 16. California, asst. prof. zool, 19-.

REBACK, John F(rederick), *Bacteriology.* South Bend, Ind, 8/25/17; m. 46, c. 1. B.S, Notre Dame, 40, M.S, 42. Hopkins, 48-.

REBSTOCK, Mildred C(atherine), *Biochemistry.* Elkhart, Ind, 11/29/19. B.A, N. Cent. Col, 42; M.A, Illinois, 43, Ph.D, 45. Parke, Davis Co, 45-.

RECORD, Samuel J(ames), *Forestry.* Crawfordsville, Ind, 3/10/81, died, 45. A.B, Wabash Col, 03, A.M, 06; M.F, Yale, 05. U. S. Forest Serv, 04-10; Yale, 10-45, prof, 17-39, dean, 39-45. Author of several volumes on wood.

RECTOR, Charles H(uston), *Chemistry.* Greencastle, Ind, 3/1/17; m. 42, c. 1. A.B, DePauw, 38; Ph.D, Northwestern, 42. Monsanto Chem. Co, 46-.

REDDICK, Donald, *Plant pathology* (starred). Sheridan, Mo, 3/1/83; m. 09, 46, c. 3. A.B, Wabash Col, 05; Ph.D, Cornell, 09. Cornell, 07-, prof, 11-.

REDDICK, Harry W(ilfred), *Mathematics.* Raysville, Ind, 2/6/83; m. A.B, Indiana, 04; A.M, Illinois, 06; Ph.D, Columbia, 10. Cooper Union Col, prof, 15-41; N. Y. U, 43-.

REDEKER, Harry Erwin, *Chemistry.* Butler, Ind, 11/8/89; m. 14, c. 4. B.S, Idaho, 12; M.A, Stanford, 28, Ph.D, 32. San Mateo Jr. Col, 31-.

REDER, Ruth, *Biochemistry.* Logansport, Ind, 12/21/98; m. A.B, Oberlin Col, 20; M.A, Illinois, 27, Ph.D, 29. Okla. A. & M. Col, assoc. prof, 29-.

REED, Adrian F(aragher), *Anatomy.* Terre Haute, Ind, 12/22/07; m. 35. B.A, DePauw, 28; M.A, Cornell, 31, Ph.D, 33; M.D, Tulane, 43. Tulane sch. med, 33-, assoc. prof, 43-.

REED, Frank H(ynes), *Chemistry.* Logansport, Ind, 1/12/90; m. 17, 46, c. 2. A.B, Wabash Col, 11; Ph.D, Chicago, 17. Wabash Col, instr, 13-14; Ill. Geol. Surv, ch. chem, 31-.

REED, Fredda D(oris), *Botany.* Parker, Ind, 8/15/94. A.B, Earlham Col, 18; M.S, Chicago, 23, Ph.D, 24. Earlham instr, 24-26; Mt. Holyoke Col, 28-, prof, 43-.

REED, Harry James, *Agriculture.* Paris, Ill, 2/9/87; m. 15, c. 2. B.S.A, Purdue, 11. Purdue, exp. sta, 17-, dir, 39-, dean sch. agr, 39-.

REED, H(omer) B(losser), *Psychology.* Youngstown, O, 8/16/86; m. 12, 22, c. 6. A.B, A.M, Indiana, 09; Ph.D, Chicago, 12. Ft. Hays Kans. State Col, prof, 29-.

REED, John O(ren), *Experimental physics* (starred). New Castle, Ind, 12/31/56, died, 16. Ph.B, Michigan, 85, Ph.M, 93; Ph.D, Jena, 97. Michigan, 92-16, prof, 05-16, dean, 07-16.

REES, O(rin) W(ainwright), *Analytical chemistry.* Vermilion Grove, Ill, 7/29/98. B.S, Earlham Col, 22; M.S, Illinois, 25, Ph.D, 31. Earlham, instr, 22-24; Ill. Geol. Surv, 31-.

REESE, Floyd E(rnest), *Chemistry.* Ransomville, N. Y, 11/8/17; m. 43, c. 2. B.S, Greenville Col, 41; M.S, Purdue, 44, Ph.D, 47. Houghton Col, prof, 48-.

REEVE, W(illiam) D(avid), *Mathematics.* Edwardsport, Ind, 9/11/83. B.S, Chicago, 09; Ph.D, Minnesota, 24. Columbia, Teachers Col, prof, 24-49.

REEVES, J(ohn) R(obert), *Geology.* Anderson, Ind, 3/17/96; m. A.B, Indiana, 20, A.M, 21, Ph.D, 23. Indiana, instr, 21-24; Republic Light, Heat & Power Co, supt, 38-47, v. p, 47-. Indiana oil shale.

REGAN, Francis, *Mathematics.* Vigo Co, Ind, 1/10/03. A.B, Ind. State Teachers Col, 22; A.M, Indiana, 30; Ph.D, Michigan, 32. St. Louis, 32-, prof, 45-.

REICHELDERFER, Francis Wilton, *Meteorology.* Harlan, Ind, 8/6/95; m. 20, c. 1. A.B, Northwestern, 17, hon. D.Sc, 39. U. S. Navy, meteorol. officer, 18-38; U. S. Weather Bur, ch. 38-. Natl. Acad. Sci; Meteorol. Soc. (pres, 40-41).

REICHERT, J(oseph) S(eraphim), *Inorganic chemistry.* New Almelo, Kans, 8/25/89; m. 19, c. 3. A.B, Miami (O.), 15; M.A, Minnesota, 17; Ph.D, Notre Dame, 22. Notre Dame, prof, 20-24; Dupont Co, 28-.

REID, Ernest A., *Electrical engineering.* Oxford, Ind; m. 16. B.S, Miss. State Col, 11; B.S, Illinois, 14, M.S, 15, E.E, 27. Illinois, 17-, assoc. prof, 30-47, prof, 47-.

REID, George W(illard), *Civil engineering.* Indianapolis, Ind, 12/18/17; m. 44, c. 1. B.S, Purdue, 42; M.S, Harvard, 43. Ind. State Bd. Health, sanit. eng, 44-45; Ga. Inst. Tech, assoc. prof, 46-.

REID, J(ames) J(ohnston), *Agricultural bacteriology.* Indianapolis, Ind, 8/7/98; m. 27, c. 5. B.S, Purdue, 23; M.S, Wisconsin, 33, Ph.D, 36. Pa. State Col, 36-, prof, 45-.

REID, Kirk M(endenhall), *Illuminating engineering.* Hartford City, Ind, 4/29/98; m. 25, c. 2. E.E, Cornell, 20. Gen. Elec. (Ft. Wayne), lamp dept, 24-.

REID, Walter P(hillip), *Applied mathematics.* Cleveland, O, 8/8/16. B.S, Carnegie Inst. Tech, 38, M.S, 39; Ph.D, Pittsburgh, 42. Purdue, instr, 43-.

REID, W(illiam) Bradley, *Chemistry.* Indianapolis, Ind, 8/2/20; m. 45. B.S, Butler, 42; M.A, Indiana, 44, Ph.D, 46. Upjohn Co, 46-.

REIGHARD, Jacob (Ellsworth), *Zoology* (starred). La Porte, Ind, 7/2/61, died, 42. Ph.B, Michigan, 82. High schs. (La Porte), 82-83; Michigan, 86-, prof, 91-.

REINTJES, Harold, *Chemical engineering,* Terre Haute, Ind, 3/28/13; m. 37, c. 1. B.S, Rose Poly. Inst, 35. Commercial Solvents Corp, 35-36; Great Lakes Carbon Corp, assoc. dir. develop, 42-.

REITEMEIER, R(obert) F(rancis), *Agronomy, Soil science.* Logansport, Ind, 1/24/12; m. 35, c. 2. B.S, Purdue, 33; A.M, Missouri, 34; Ph.D, Arizona, 38. U. S. Dept. Agr, 39-.

REITER, A(rthur) F(rederick), *Chemistry.* Bluffton, O, 3/26/74. A.B, Tri-State Col. (Ind.), 99; M.S, Chicago, 16. Phillips, prof, 07-34.

REITH, John E(dward), *Chemistry.* Kokomo, Ind, 9/29/19; m. B.S, Notre Dame, 41, M.S, 42, Ph.D, 47. Dupont Co, 44-.

REITZ, Henry C(harles), *Biochemistry.* Springfield, Mo, 1/8/06; m. 37, c. 2. B.S, Illinois, 27; M.S, Maryland, 31; Ph.D, Minnesota, 38. Purdue, asst. prof, 47-.

REMMERS, H(ermann) H(enry), *Educational psychology.* Norden, Germany. 11/25/92; nat, 06; m. B.A, Iowa, 21, M.A, 22, Ph.D, 27. Purdue, 23-, prof, 30-.

RENDALL, John Lloyd, *Organic chemistry.* Des Moines, Ia, 7/12/18; m. 42, c. 1. B.S, Iowa State Col, 41; Ph.D, Indiana, 43. Minn. Mining & Mfg. Co, 46-.

RENZEMA, Theodore S(amuel), *Physics.* Grand Rapids, Mich, 7/12/12; m. 39, c. 1. A.B, Hope Col, 34; M.S, Rutgers, 37; Ph.D, Purdue, 48. Purdue, instr, 42-46; Clarkson Col, assoc. prof, 48-.

RESNICK, William, *Chemical engineering.* Chicago, Ill, 9/10/22; m. 44. B.S, Purdue, 43; M.S, Michigan, 45, Ph.D, 48. Ill. Inst. Tech, asst. prof, 47-.

RETALLACK, J(ames) Gordon, *Physics.* Edmonton, Alta, Can, 1/5/15; m. 41; c. 2. B.A, British Columbia, 38; Ph.D, California, 48. Indiana, asst. prof, 48-.

RETTGER, E(rnest) W(illiam), *Applied mechanics.* Huntingburg, Ind, 4/6/71, died, 38. A.B, Indiana, 93; Ph.D, Clark, 98. Cornell, asst. prof, 08-38.

RETTGER, L(eo) F(rederick), *Bacteriology.* Huntingburg, Ind, 3/17/74. A.B, Indiana, 96, A.M, 97; Ph.D, Yale, 02. Yale, 02-, prof, 19-42, emer, 42-. Soc. Bact. (pres, 17).

RETTGER, L(ouis) J(ohn), *Physiology.* Huntingburg, Ind, 10/19/67, died, 43. A.B, Hopkins, 88, Ph.D, 09; A.M, Indiana, 90. Ind. State Nor. Sch, prof, 91-. Ind. Acad. Sci. (pres, 29).

RETTGER, R(obert) E(rnest), *Geology.* Terre Haute, Ind, 4/6/97. A.B, Wisconsin, 20, A.M, 22. Sun Oil Co, 25-.

REUSZER, Herbert W(illiam), *Soil microbiology.* Jamestown, Mo, 8/4/03; m. 35, c. 2. B.S, Missouri, 25; M.S, Rutgers, 30, Ph.D, 32. Purdue, exp. sta, 47-.

REX, Earl C(hester), *Mathematics.* South Bend, Ind, 6/29/00; m. 27. B.S, Notre Dame, 27; M.S, Washington, 31. Grays Harbor Col, 32-41; Compton Col, asst. prof, 43-46; Pepperdine Col, 46-.

REYNIERS, James (Arthur), *Bacteriology.* Mishawaka, Ind, 4/16/08; m. 30, c. 5. B.S, Notre Dame, 30, M.S, 31. Notre Dame, 31-, assoc. prof, 38-45, res. prof, 45-.

REYNOLDS, Albert E(ugene), *Zoology.* Staunton, Ind, 8/4/07; m. 33, c. 2. A.B, DePauw, 30; S.M, Chicago, 35, Ph.D, 41. DePauw, 32-, prof, 47-.

REYNOLDS, (Benjamin Johnson) Chapman, *Pharmacology.* Cynthiana, Ky, 3/14/98; m. 19, 26, c. 3. B.S, Valparaiso, 16; B.M, Louisiana, 35, M.D, 36. Louisiana, 36-, assoc. prof, 46-.

REYNOLDS, Dewey A(lonzo), *Chemistry.* Plymouth, Ind, 7/11/98; m. 26, c. 2. B.S, Washington and Lee, 22. U. S. Bur. Mines, 23-, fuels chem, 29-.

REYNOLDS, John Ozment, *Mathematics.* Bridgeport, Ind, 6/15/04; m. 33, c. 2. B.S, Guilford Col, 25; M.A, North Carolina, 40, Ph.D, 47. E. Carolina Teachers Col, assoc. prof, 47-.

REYNOLDS, Myron B(urton), *Physics, Chemistry.* New Ross, Ind, 4/22/16; m. 43, c. 1. A.B, Wabash Col, 38; Ph.D, Brown, 47. Wabash Col, instr, 38-39; Gen. Elec, res. assoc, 47-.

RHINEHART, D(armon) A(rtelle), *Anatomy, Roentgenology.* Pulaski Co, Ind, 6/5/87. A.B, Indiana, 10; M.A, 12, M.D, 13. Indiana, instr, 13-14; Arkansas, 14-, prof, 17-37, radiol, 37-.

RHINEHART, Jesse Batley, *Psychology.* Ellsworth, Pa, 8/20/07; m. 36, c. 1. B.S, Geneva Col, 30; M.A, Pittsburgh, 32, Ph.D, 35. Illinois, asst. prof, 45-47; U. S. Veterans Admin. (Indianapolis), ch. clin. psych, 47-.

RHOADS, Paul S(pottswood), *Medicine.* Terre Haute, Ind, 3/12/98; m. 25, c. 4. B.S. Chicago, 22; M.D, Rush, 24. Northwestern, 35-, prof, 46-.

RHODEHAMEL, H(arley) W(esley), *Chemistry.* Indianapolis, Ind, 12/6/84; m. 10, c. 2. B.S, Purdue, 07. Eli Lilly & Co, 07-, dir. res. develop, 15-47, exec. dir. res, 47-.

RHODES, Fred H(ofmann), *Chemical engineering.* Rochester, Ind, 6/30/89. A.B, Wabash Col, 10; Ph.D, Cornell, 14. Cornell, prof, 20-, dir. sch. chem. and metal. eng, 38-.

RHODES, Herbert D(awson), *Chemistry.* Webster Groves, Mo, 7/9/12; m. 37, c. 3. B.S, Arizona, 35, M.S, 36; Ph.D, Illinois, 39. Standard Oil Co. Ind, 39-43; Arizona, 43-, assoc. prof, 47-.

RICE, Charles N(elson), *Physical chemistry.* Montgomery Co, Ind, 3/3/18; m. 40, c. 3. A.B, Franklin Col, 40; Ph.D, California, 43. Purdue, asst. prof, 46-47; Eli Lilly & Co, radio-chem, 47-.

RICE, E(ldon) E(merson), *Chemistry.* Huntington, Ind, 2/29/12; m. 40, c. 2. A.B, DePauw, 34; M.S, Illinois, 36, Ph.D, 38. Swift & Co, biochem, 41-.

RICE, Frank E(lmore), *Chemistry.* Cuba, Ind, 7/31/87; m. 22, c. 2. A.B, Indiana, 09; Ph.D, Cornell, 14. Cornell, 12-24, asst. prof, 15-24; Evap. Milk Assn, exec. sec, 28-.

RICE, Raymond M(ain), *Medicine.* Bancroft, Nebr, 12/28/01; m. 31, c. 2. B.S, Nebraska, 24, M.D, 29. Eli Lilly & Co, dir. med. div. lab, 36-; Indiana, sch. med, assoc, 43-.

RICE, Thurman Brooks, *Public Health.* Grant Co, Ind, 8/17/88; m. 10, c. 5. B.S, Marion Col, 09; B.Pd, Valparaiso, 12; A.B, Muncie Nor. Inst, 13; A.B, Indiana, 14, A.M, 17, M.D, 21. Ind. grade and high schs, 05-10, sch. supt, 10-12; Winona Col, head sci. dept, 14-16; Indiana, asst. prof. path, 21-24; State Bd. Health, Ind, dir. lab. hygiene, 24-26; Indiana, 26, prof. bact. and pub. health, 31-47, prof. pub. health, 47-, chm. dept, 28-. Author of widely used books; frequent lecturer.

RICE, Ward J(ennings), *Chemistry.* Roachdale, Ind, 2/21/90; m. 23, c. 3. B.S, Purdue, 11. Eli Lilly & Co, 11-, dir. chem. control, 30-49; assoc. exec. dir. res, 49-.

RICH, Ronald Emil, *Chemical engineering.* Mishawaka, Ind, 1/4/07; m. 30, c. 3. B.S, Notre Dame, 28, M.S, 36. Notre Dame, 31-, prof, 44-.

RICHARDS, A(ute), *Zoology.* Tekamah, Nebr, 10/31/85; m. 17, c. 2. A.B, Kansas, 08; M.A, Wisconsin, 09; Ph.D, Princeton, 11. Wabash Col, prof, 16-20; Oklahoma, prof, 20-.

RICHARDS, C(harles) R(uss), *Mechanical engineering.* Clarkshill, Ind, 3/23/71, died, 41. B.M.E, Purdue, 90, M.E, 91; M.M.E, Cornell, 95. Nebraska, prof, 97-11; Illinois, 11-41, dean col. eng and dir, eng. exp. sta, 17-41.

RICHARDS, Mildred (Albro) Hoge, *Zoology.* Baltimore, Md, 7/7/85; m. 17, c. 2. A.B, Goucher Col, 08; M.A, Columbia 12, Ph.D, 14. Indiana, instr, 14-18; Oklahoma, assoc. prof, 47-48.

RICHARDS, R(ebekah) Ruth, *Biology.* Indianapolis, Ind, 1/6/07. A.B, DePauw, 27; A.M, Michigan, 31; Ph.D, Chicago, 49. Ohio Wesleyan, asst. prof, 43-45; Ill. State Nor, 48-, assoc. prof, 49-.

RICHARDSON, Robert (Shirley), *Astronomy.* Kokomo, Ind, 4/22/02; m. 42, c. 1. B.A, California L. A, 26; Ph.D, California, 30. Carnegie Institution, Mt. Wilson and Palomar Observs, 30-.

RICHTER, Kenneth M(urrell), *Embryology.* Newcastle, Ind, 8/26/12; m. 36, c. 2. B.A, Ind. Cent. Col, 34; M.A, Indiana, 37; Ph.D, Oklahoma, 39. Oklahoma, 43-, assoc. prof, 46-.

RICHTER, Richard B(iddle), *Neurology.* La Porte, Ind, 5/9/01; m. 26, c. 2. S.B, Chicago, 22; M.D, Rush, 25. Chicago, 36-, prof, 46-.

RICKARDS, Burt R(ansom), *Public health.* Cambridge, Mass, 9/28/76. B.S, Mass. Inst. Tech, 99. Eli Lilly & Co, asst. dir. biol. dept, 12-15; dir, State Dept. Health, N. Y, 17-.

RICKER, William E(dwin), *Limnology.* Waterdown, Ont, Can, 8/11/08; m. 35, c. 4. B.A, Toronto, 30, M.A, 31, Ph.D, 36. Indiana, asst. prof. to prof, and dir. lake and stream surv, 39-50.

RICKS, Herbert E(lias), *Chemistry.* Elwood, Ind, 4/29/17; m. 45, c. 2. B.S, Indiana, 39, M.A, 40, Ph.D, 42. Westinghouse Elec, materials eng, 44-.

RIDDICK, John A(llen), *Analytical chemistry.* Greenville, Tex, 12/20/03; m. 36. A.B, A.M, Southwestern (Texas), 26; Ph.D, Iowa, 29. Commercial Solvents Corp. (Terre Haute), 36-, chief anal. chem, res. dept, 45-.

RIDDLE, Oscar, *Zoology* (starred), *Physiology.* Cincinnati, Ind, 9/27/77; m. 37. A.B, Indiana, 02; Ph.D, Chicago, 07. Carnegie Institution, 12-45. Natl. Acad. Sci. Nature of sex; physiology of reproduction.

RIDER, B(enjamin) F(ranklin), *Analytical chemistry.* Cleveland, O, 12/4/21; m. 44. B.S, Mt. Union Col, 43; M.S, Purdue, 44, Ph.D, 47. Atomic Power Lab, Gen. Elec, res. assoc, 47-.

RIDGLEY, Douglas C(lay), *Geography.* Wabash Co, Ind, 3/18/68; m. 91, 20, c. 1. A.B, Indiana, 93; M.S, Chicago, 22; Ph.D, Clark, 25. Ind. pub. schs, 84-95; Ill. State Nor. Sch, prof, 03-22; Clark, 24-, prof, 28-38, emer, 38-. Natl. Council Geog. Teachers (pres, 31).

RIEBSOMER, J(esse) L(eroy), *Chemistry.* Connersville, Ind, 6/6/05; m. 28, c. 1. B.A, DePauw, 28; Ph.D, Cornell, 32. DePauw, 32-45, prof, 40-45; New Mexico, prof, 45-.

RIECKEN, W(illia)m E(mil), *Botany.* Mt. Vernon, Ind, 1/23/92; m. 28, c. 2. B.A, Indiana, 23, M.A, 25, Ph.D, 28. Indiana, instr, 24-28; Ohio Wesleyan, asst. prof, 28-34; Millsaps Col, prof, 34-.

RIEKE, Carol A(nger), *Astronomy, Physics.* Milwaukee, Wis, 1/17/08; m. 32, c. 2. B.A, Northwestern, 28, M.A, 29; Ph.D, Radcliffe Col, 32. Purdue, instr, 47-.

RIEKE, Foster F(rederick), *Physics.* Barrington, Ill, 12/15/05; m. 32, c. 2. B.S, Northwestern, 28; M.A, Harvard, 30, Ph.D, 33. Purdue, assoc. prof, 46-.

RIES, Victor H(einrich), *Floriculture.* N. Y. C, 7/29/94; m. 19, c. 1. B.S, Cornell, 15, M.S, 16. Purdue, asst. prof, 21-26; Ohio State, 27-, assoc. prof, 41-.

RIFENBURGH, S(umner) A(dam), *Zoology.* Rome, Pa, 3/13/96; m. 17. B.S, Valparaiso, 15, A.B, 16, A.M, 21; M.S, Chicago, 22; Ph.D, Purdue, 35. Valparaiso, 19-23, prof, 22-23; Purdue, 23-, assoc, prof, 46-.

RIGGS, Carl D(aniel), *Zoology.* Indianapolis, Ind, 12/7/20. B.S, Michigan, 44, M.S, 46, Ph.D, 49. Ind. Lake and Stream Survey, 44-47; Oklahoma, instr, 48-.

RIGGS, E(lmer) S(amuel), *Vertebrate paleontology.* Nineveh, Ind, 1/23/69; m. 01, c. 2. A.B, Kansas, 96. Field Museum Nat. Hist, 99-21, curator, 37-42. Paleont. Soc. (pres, 18).

RIGGS, W(illiam) Robert, *Chemical engineering.* Excelsior Springs, Mo, 6/24/09; m. 37, c. 2. B.S, Mo. Sch. Mines, 32. Sinclair Ref. Co. (Ind.), 32-40.

RILEY, Elizabeth F(rances), *Organic chemistry.* Greenville, Tex, 9/12/12. B.A, Hardin-Simmons, 29, M.A, 31; Ph.D, Purdue, 41. Purdue, Navy res, 47-49.

RINEHART, W(ilmer) T(oney), *Physical chemistry.* Eaton, O, 8/10/07; m. 30. A.B, Indiana, 29, A.M, 30, Ph.D, 40. Armour Res. Found, 42-47.

RIOCH, David McK(enzie), *Psychiatry.* Mussoorie, India, 7/6/00, nat, 38; m. 38. B.A, Butler Col, 20; M.D, Hopkins, 24. Harvard, med. sch, asst. prof. anat, 31-38; Washington (St. Louis), prof, 38-43; Chestnut Lodge Sanitarium, dir. res, 43-.

RIPLEY, G(iles) E(mmett), *Physics.* Decatur, Ind, 74, died, 43. B.S, Purdue, 99, M.S, 02. Arkansas, prof, 08-40.

RISSER, J(acob) R(utt), *Physics.* Lancaster, Pa, 8/3/10; m. 37, c. 2. A.B, Franklin and Marshall Col, 31; A.M, Princeton, 35, Ph.D, 38. Purdue, 37-46, asst. prof, 41-46; Rice Inst, asst. prof, 46-.

RITCHEY, Harold W., *Physical chemistry.* Kokomo, Ind, 10/5/12. B.S, Purdue, 34, M.S, 36; Ph.D, 38. Union Oil Co. Calif, 38-41; U. S. Navy, 41-.

RITCHEY, Herbert E., *Organic chemistry.* Rossville, Ind, 9/6/06; m. 32, c. 3. A.B, Indiana, 28; M.S, Purdue, 31. Va. Mil. Inst, 34-, prof, 47-.

RITCHEY, J. O., *Medicine.* Owasco, Ind, 2/1/91; m. 22. B.S, Indiana, 16, M.D, 18, 19, M.S, 21. Indiana, 21-, prof, 32-.

RITCHIE, Earland, *Physics.* Yorktown, Ind, 8/2/98; m. 26, c. 2. B.S, Ball State Col, 25; M.A, Columbia, 26; Ph.D, Indiana, 31. Ind. schs, 16-25, high schs, 20-25; Ball State Col, 35-37; Taylor, dean, 38-43; DePauw, prof, 43-46; Centre Col, head dept, 46-.

RITTER, Sarah M(argaret) (Mrs. Ira Brown), *Psychology.* Orleans, Ind, 3/31/73. B.S, 91; A.B, Indiana, 10; Ph.D, Chicago, 16. Ind. pub. and high schs, 91-09; Huntingdon Col. (Ala.), 30-35.

ROACH, J. Robert, *Chemistry.* Stockton, Ill, 11/24/13. B.S, Iowa State Col, 36; Ph.D, Purdue, 42. Gen. Mills, Inc, res, 43-.

ROAHRIG, Henry Luther, *Sanitary engineering.* Bourbon, Ind, 5/17/10; m. 31, c. 3. B.S, Purdue, 31. State Hy. Comn, Ind, 34-41; U. S. Pub. Health Serv, 41-, eng, 42-48, sanita. eng, 48-.

ROARK, Louis, *Geology.* Kingfisher, Okla, 2/9/90; m. 15, c. 2. B.A, Oklahoma, 12; M.S, Indiana, 21. Indiana, asst. prof, 17-18; Margay Oil Corp, 40-45; Sunray Oil Corp. (Tulsa), 45-.

ROBB, George P(orter), *Cardiology.* Syracuse, N. Y, 7/8/98; m. 31, c. 3. A.B, Indiana, 23, M.D, 26. Metropolitan Life Ins. Co, asst. med. dir, 34-.

ROBB, R(ichard) Marion, *Chemistry.* Mt. Zion, Ga, 7/10/15; m. 35, c. 3. B.S, Tennessee, 37, M.S, 40; Ph.D, Purdue, 44. Dupont Co, group leader res, 44-.

ROBBINS, Charles Kendall, *Mathematics.* Angelica, N. Y, 4/21/88; m. 13, c. 2. A.B, Hobart Col, 10; A.M, Harvard, 13. Purdue, 14-, assoc. prof, 47-.

ROBBINS, D(aniel) S(tucker), *Physics.* Asbury, Pa, 64. B.S, North. Ind. Nor. Sch, 89, M.S, 94; Ph.D, Valparaiso, 07. N. Mex. Col, 19-33.

ROBBINS, Rainard B(enton), *Mathematics.* Clinton Co, Ind, 4/21/86. A.B, Indiana, 09, A.M, 10; Ph.D, Harvard, 14. Yale, 14-17; Michigan, 17-23; N. Y. Ins. Dept, 23-27; Tchers. Ins. & Annuity Assn, sec. and v. p, 31-48.

ROBERTS, Byron D(avid), *Mathematics.* Chicago, Ill, 6/16/93; m. 17, c. 2. B.A, Indiana, 20, M.A, 22; Ph.D, Iowa, 31. Parsons Col, prof, 20-32; N. Mex. Highlands, 32-.

ROBERTS, Carroll Norton, *Geology.* Indianapolis, Ind, 4/18/20. A.B, DePauw, 41. DePauw, instr, 46-47; Dept. Conserv, Ind, 48-.

ROBERTS, E(dward) N(oel), *Chemistry.* Wind River, Wyo, 3/1/88; m. 24, c. 3. B.A, Wyoming, 11; B.A, Oxford, 13 (Rhodes scholar); Ph.D, Chicago, 18. Standard Oil Co. Ind, 26-.

ROBERTS, James L(emoyne), *Agricultural bacteriology.* Normanna, Tex, 10/27/12; m. 37, c. 3. B.A, Texas, 33, M.A, 34; Ph.D, Wisconsin, 37. Purdue, asst. prof, assoc. exp. sta, 37-44.

ROBERTS, John M(aurice), *Mycology.* Hammond, Ind, 8/9/16; m. 40, c. 2. B.S, Indiana, 39; M.S, Northwestern, 41; Ph.D, Mich. State Col, 46. Mich. Dept. Health, 46-.

ROBERTS, J(oseph) K(astle), *Chemical engineering.* Berkeley, Calif, 1/13/05. B.S, Kentucky, 25; M.S, Mass. Inst. Tech, 28. Standard Oil Co. Ind, 28-, dir. res, 38-.

ROBERTS, Ralph E(ldon), *Dairy science.* Templeton, Ind, 10/8/96; m. 2nd, 38; c. 1. B.S, Purdue, 21, M.S, 32. Purdue, 21-, supt. creamery, 24-, prof. dairy mfrs, 32-

ROBERTS, R(obert) C(hester), *Chemistry.* Onaga, Kans, 3/2/91. B.S, Ottawa (Kans.), 12; A.M, Kansas, 14; Ph.D, Yale, 21. Franklin Col, prof, 15-.

ROBERTS, Otis Sidney, *Chemistry.* Fairbury, Ill, 8/19/62, died, 35. B.Sc, Purdue, 83. Ind. high schs, 83-07; Purdue, 07-35, asst. prof, 10-35.

ROBERTS, Roy E(lmer), *Poultry husbandry.* Oxford, Ind, 6/8/94; m. 26, c. 3. B.S.A, Purdue, 21; M.S, Ohio State, 25. Purdue, exp. sta, 26-, assoc. prof, 46-.

ROBERTS, Stephen James, *Veterinary medicine.* Indianapolis, Ind, 8/5/15; m. 38, c. 1. D.V.M, Cornell, 38; M.S, Kans. State Col, 42. Cornell, 42-, prof, 47-.

ROBERTS, Tilden W(irt), *Animal behavior, Animal physiology.* Donna, Tex, 12/12/11; m. 38. A.B, Indiana, 33; M.S, Northwestern, 37; Ph.D, Illinois, 42. South. California, asst. prof, 46-.

ROBERTS, Wendell E., *Clinical X-ray.* Poe, Ind, 10/3/95; m. 22, c. 5. Franklin Col, 15-17; Sc.D. Charlotte Hosp, 22-.

ROBERTSON, Fred, *Mathematics.* Nashville, Ind, 11/6/99; m. 24, c. 3. A.B, Indiana, 24, A.M, 27. Ind. high schs, 24-27; Iowa State Col, instr. to asst. prof, 27-.

ROBERTSON, Lynn (Shelby), *Agricultural economics.* Glenville, Minn, 1/11/90; m. 15, c. 5. Minnesota, 14; M.S, Purdue, 30; Ph.D, Cornell, 37. Purdue, 14-, asst. ch. dept, 28-.

ROBINSON, Francis P(leasant), *Psychology.* Danville, Ind, 12/21/06; m. 31, c. 2. B.A, Oregon, 29; M.A, Iowa, 30, Ph.D, 32. Ohio State, 37-, prof, 44-.

ROBINSON, James M(cOmer), *Organic chemistry.* Petoskey, Mich, 8/22/20; m. 44, c. 1. A.B, DePauw, 42; Ph.D, Indiana, 44. Merck & Co, 47-.

ROBINSON, Max B(rewster), *Mechanical engineering.* Nunda, N. Y, 12/21/88; m. 15, c. 1. M.E, Cincinnati, 12. Evansville Col, prof, 20-28; Fenn Col, 33-, dean, 46-.

ROBINSON, Rex J(ulian), *Analytical chemistry.* Maxwell, Ind, 11/15/04; m. 32, c. 3. A.B, DePauw, 25; M.A, Wisconsin, 27, Ph.D, 29. Washington (Seattle), 29-, prof, 45-.

ROBINSON, Sid, *Physiology.* Winona, Miss, 12/6/02; m. 29, c. 3. B.S, Miss. State Col, 24; M.S, Cornell, 30; Ph.D, Harvard, 38. Indiana, 30-, prof, 46-.

ROBINSON, Una L(ane), *Nutrition.* Cameron, Tex, 12/20/93. A.B, Baylor, 14, A.M, 22; Ph.D, Chicago, 36. Indiana, 29-, assoc. prof, 43-.

ROCKLIN, Albert L(ouis), *Electro chemistry.* Toronto, Ont, Can, 5/28/21; m. 46. B.A, Toronto, 43, M.A, 44, Ph.D, 46. Purdue, asst. prof, 46-.

RODERICK, Howard F(ranklin), *Chemistry.* Elkhart, Ind, 3/24/08. B.S, Michigan, 31. Wyandotte Chems. Corp, dir. res, 43-.

ROE, A(lden) F(ranklin), *Bacteriology.* Union City, Ind, 8/14/96. B.S, Michigan, 22, M.S, 23, Sc.D, 32. Geo. Washington, 32-, asst. prof, 40-.

ROE, Glenwood C., *Zoology.* Union City, Ind, 3/3/92. A.B, Colorado, 18; M.S, Georgetown, 28. U. S. Dept. Agr. and later Fed. Security Agy, 18-.

ROEDEL, George F(rederick), *Chemistry.* Saginaw, Mich, 7/1/16; m. 42, c. 3. B.S, Valparaiso, 38; M.S, Purdue, 40, Ph.D, 42. Gen. Elec, res. lab, 43-.

ROEHM, Luther Schechinger, *Biochemistry.* Indianapolis, Ind, 2/19/11; m. 38, c. 3. A.B, Indiana, 32; M.A, Indiana, 34; Ph.D, Iowa, 38. Dow Chem. Co, dir. tech. serv. & develop, 37-.

ROEHR, Walter W(illiam), *Physics.* Mt. Vernon, Ind, 9/13/07. A.B, DePauw, 29; M.S, Washington (St. Louis), 31, Ph.D, 33. Kimberly-Clark Corp. (Neenah, Wis.), res, 34-.

ROEMER, John J(acob), *Organic chemistry.* Struthers, O, 9/13/13; m. 41, c. 2. A.B, Youngstown Col, 35; M.A, Indiana, 36, Ph.D, 40. Am. Cyanamid Co, res. chem, 41-.

ROESSLER, William George, *Bacteriology.* Louisville, Ky, 4/13/18; m. 45, c. 2. B.S, Indiana, 40, M.A, 42. Camp Detrick, biochem, 44-.

ROFF, Merrill F(lagg), *Psychology.* Wichita, Kans, 4/13/09; m. 33, c. 4. A.B, Wichita, 29; M.A, Kansas, 30; Ph.D, Cornell, 33. Indiana, assoc. prof, 35-47; Minnesota, res. prof, 47-.

ROGERS, A(rthur) O(smond), *Chemistry.* Lindsay, Ont, Can, 08. B.A, Queen's (Can.), 29, M.A, 32; Ph.D, Purdue, 35. Dupont Co, 36-.

ROGERS, F(rancis) M(itchell), *Chemistry.* Morgantown, N. C, 3/22/83. A.B, Davidson Col, 03, A.M, 04; Ph.D, Hopkins, 07. Standard Oil Co. Ind, 08-, ch. chem, 14-.

ROGERS, F(red) T(erry), *Physics.* Henderson, Ky, 11/4/14; m. 36, c. 2. B.A, Rice Inst, 35, M.A, 36, Ph.D, 39. U. S. Naval Ordnance Plant (Indianapolis), head sect, res. div, 43-46.

ROGERS, Gordon F(ox), *Radio engineering.* Vernon, Ind, 10/7/14; m. 45, c. 2. B.S, Clemson Col, 37. Radio Corp. Am. labs, 46-.

ROGERS, J(ames) Speed, *Zoology.* Dayton, Ind, 11/4/92; m. 18, c. 2. A.B, Michigan, 15, M.A, 16, Ph.D, 31. Florida, prof, 22-46; Michigan, prof, 47-.

ROGERS, Marvin C(arson), *Chemical engineering.* North St. Paul, Minn, 5/13/04; m. 32, c. 2. B.S, Minnesota, 26; M.S, Michigan, 27, Ph.D, 29. Standard Oil Co. Ind, chem. eng, 32-38; R. R. Donnelley & Sons, dir. res, 40-.

ROGERS, T(homas) Hunton, *Chemistry.* Fayette Co, Ky, 1/20/95; m. 22, c. 2. A.B, Centre Col, 14, Ph.D, Hopkins, 17. Standard Oil Co. Ind, 22-, dir. res, 47-.

ROHRER, Charles S(tephen), *Chemistry.* Weatherford, Tex, 4/6/09; m. 32, c. 2. B.S, Kansas, 34; M.S, N. Texas State Col, 37; A.M, Columbia, 39, Ph.D, 42. Indiana, 46-.

ROHRMANN, Ewald, *Organic chemistry.* Helena, Mont, 3/21/12; m. 42, c. 2. B.S, Oregon State Col, 34; Ph.D, Pa. State Col, 39. Eli Lilly & Co, res. chem, 40-47, dir. div, 47-.

ROLLER, Duane (Emerson), *Physics.* Minerva, O, 10/9/94; m. 19, c. 1. A.B, Oklahoma, 23, M.S, 25; Ph.D, Calif. Inst. Tech, 29. Wabash Col, prof, 44-.

ROLLER, P(leasant) E(rnest), *Physical chemistry.* Meade, Kans, 11/13/98. A.B, Friends, 20; A.M, Colorado, 23, Ph.D, 27; M.S, Nebraska, 26. Valparaiso, 27-29; Morris Harvey Col, 31-.

ROOT, Andrew A(lex), *Engineering.* Universal, Ind, 3/13/16; m. 46. B.S, Kentucky, 42. United Shoe Machinery Corp, res. eng, 46-.

ROOT, C(linton) W(illiam), *Physiology.* Ft. Wayne, Ind, 1/23/00. A.B, Oberlin Col, 27, A.M, 29; Ph.D, Princeton, 34. Syracuse, asst. prof. zool, 35-.

ROPER, Val J(erome), *Engineering.* Indianapolis, Ind, 6/24/03; m. 28, c. 1. B.S, Purdue, 25. Gen. Elec. (Ft. Wayne), illuminating eng, 25-35, head lighting sect, 35-.

ROSE, Embree R(ector), *Biochemistry.* Linton, Ind, 6/25/93; m. 22, c. 2. A.B, Indiana, 19, A.M, 22, M.D, 41. Florida, health serv, dir, 45-48; Texas Tech. Col, 48-.

ROSE, John Kerr, *Geography, Climatology.* Tazewell Co, Ill, 9/25/05; m. 34, c. 6. A.B, Indiana, 28, A.M, 31; Ph.D, Chicago, 35; J.D, Geo. Washington, 45. Indiana, instr, 31-32, lect, 33-35; various Fed. posts, 36-46; Library Cong, legis. ref. serv, geog, 46-.

ROSE, J(oseph) N(elson), *Botany* (starred). Union Co, Ind, 1/11/62, died, 28; m. 88, c. 4. A.B, Wabash Col, 85, A.M, 86, Ph.D, 89. U. S. Dept. Agr, 88-96; U. S. Natl. Museum, 96-12; Carnegie Institution, res. assoc, 12-23. Umbelliferae; Crassulaceae and Cactaceae of North America.

ROSE, Sister Mary (Stockton), *Organic chemistry.* Cincinnati, O, 12/8/08. B.S, Athenaeum of Ohio, 37; M.A, Cincinnati, 42, Ph.D, 43. Marian Col. (Ind.), asst. prof, 43-.

ROSE, Robert H(arold), *Geology.* Jasper, Ind, 3/31/03; m. 33, c. 2. A.B, Indiana, 26. Lake Meade Area, 37-46, supt, 42-46; Mesa Verde Natl. Park, supt, 46-.

ROSENTHAL, Arthur, *Mathematics.* Fuerth, Bavaria, 2/24/87, nat, 45. Ph.D, Munich, 09. Heidelberg, 12-35; New Mexico, 42-47; Purdue, prof, 47-.

ROSS, Arnold E(phraim), *Mathematics.* Chicago, Ill, 8/24/06; m. 31. B.S, Chicago, 28, M.S, 29, Ph.D, 31. Notre Dame, head dept, 46-.

ROSS, Auburn A(bbott), *Pharmaceutical chemistry.* Ticonderoga, N. Y, 3/25/04; m. 49. A.B, Middlebury Col, 26; M.S, Pa. State Col, 27. Eli Lilly & Co, 27-, pharmaceut. chem, 30-40, asst. supt. chem. mfg, 40-.

ROSS, Charles A(lbert), *Pharmacology.* Kentland, Ind, 9/12/17; m. 47. B.S, Purdue, 40; M.S, Kentucky, 42. Sharp & Dohme, med. res, 47-.

ROSS, Thurston H(oward), *Statistics.* Richmond, Ind, 10/25/94. B.S, Otterbein Col, 17; M.B.A, Southern California, 22, Ph.D, 33. South. California, instr. to prof, 28-.

ROSSBACHER, H(enry John), *Chemistry.* Kendallville, Ind, 12/19/89; m. 16, c. 2. B.S, Purdue, 12, M.S, 17; Ph.D, Chicago, 19. West Elec, 21-, ch. eng. mfg, 39-.

ROSSER, Charles M(arvin), *Organic chemistry.* Sidney, O, 1/14/09; m. 33. A.B, Wabash Col, 30; M.Sc, N. Y. U, 32, Ph.D, 35, Am. Viscose Corp, Sylvania Div, 35-.

ROSTORFER, Howard H(ayes), *Physiology.* Jackson Center, O, 6/1/09; m. 36, c. 1. A.B, Wittenberg Col, 32; M.A, Ohio State, 35, Ph.D, 40. Indiana, asst. prof. to assoc. prof, 46-.

ROTH, Jay Sanford, *Organic chemistry.* N. Y. C, 6/10/18. B.S, Col. City N. Y, 40; M.S, Cornell, 41; Ph.D, Purdue, 44. Rutgers, asst. prof, 47-.

ROTHROCK, David A(ndrew), *Mathematics.* Milltown, Ind, 1/31/64, died, 49; m. 05, c. 4. A.B, Indiana, 92, A.M, 93; Ph.D, Leipzig, 98. Indiana, 92-38, prof, 08-38, dean col. arts and sci, 20-37. Ind. State Conserv. Comn, 25-33.

ROTHROCK, David A(ndrew), *Chemistry.* Bloomington, Ind, 12/29/10; m. 36, c. 2. A.B, A.M, Indiana, 32; Ph.D, Brown, 36. Rohm & Haas Co, chem, 37-, plastics dept, 44-.

ROTHROCK, George M(oore), *Chemistry.* Columbus, O, 5/5/19; m. 46. A.B, DePauw, 41; Ph.D, Purdue, 45. Dupont Co, 45-.

ROTHROCK, Henry S(hirley), *Chemistry.* Bloomington, Ind, 9/17/06; m. 32, c. 1. A.B, Indiana, 26; M.S, Purdue, 28; Ph.D, Pa. State Col, 31. Dupont Co, 30-.

ROTTER, Julian Bernard, *Psychology.* N. Y. C, 10/22/16; m. 41, c. 1. B.A, Brooklyn Col, 37; M.A, Iowa, 38; Ph.D, Indiana, 41. Ohio State, 46-, prof, 49-.

ROUSH, G(ar) A., *Metallurgy.* Harrisburg, Ind, 10/21/83; m. 11. A.B, Indiana, 05; M.S, Wisconsin, 10. Lehigh, 12-26, assoc. prof, 20-26; sci. writing, 27-42; U. S. Bur. Mines, 43-46; U.S. Dept. Treas, Bur. Fed. Supply, 46-49. Ed, *Mineral Indust,* 13-43.

ROUTH, J(oseph) I(saac), *Biochemistry.* Logansport, Ind, 5/8/10; m, c. 1. B.S, Purdue, 33, M.S, 34; Ph.D, Michigan, 37. Iowa, 37-, assoc. prof, 46-.

ROUTIEN, John B(roderick), *Mycology.* Mt. Vernon, Ind, 1/23/13; m. 44. A.B, DePauw, 34; A.M, Northwestern, 36; Ph.D, Mich. State Col, 40. Charles Pfizer & Co, 46-.

ROVENSTINE, E(mery) A(ndrew), *Anesthesiology.* Atwood, Ind, 7/20/95; m. 39. A.B, Wabash Col, 17; M.D, Indiana, 28. N. Y. U, 35-, prof, 37-; Bellevue Hosp, dir. anesthesia, 35-.

ROW, Charles H(erbert), *Petroleum geology.* Clay City, Ind, 5/17/95; m. 22, c. 2. A.B, Oklahoma, 19. Sun Oil Co; (Dallas), dist. geol, 21-.

ROWE, Edward J(ohn), *Pharmacy.* Racine, Wis, 12/28/10; m. 43. B.S, Wisconsin, 37, Ph.D, 41. Indianapolis Col. Phar, 41-45, assoc. prof, 43-45; Butler, col. phar, prof, 45-.

ROWE, Hartley, *Electrical engineering.* Goodland, Ind, 11/8/82; m. 08, c. 1. B.S, Purdue, 04. Isthmian Canal Comn, 08-19; United Fruit Co, ch. eng, 26-, v. p, 28-.

ROWE, Herbert W(illiam), *Paper chemistry.* Lagro, Ind, 7/1/15; m. 41, c. 1. A.B, Wabash Col, 36; M.S, Lawrence Col, 38, Ph.D, 40. Nekoosa-Edwards Paper Co, 45-.

ROWE, James L(incoln), *Chemistry.* Chicago, Ill, 11/14/17; m. 48. B.A, Princeton, 39; Ph.D, Chicago, 46. Eli Lilly & Co, 46-.

ROWE, L(ewis) W(illiam), *Bioassay, Pharmacology.* Toledo, O, 2/2/91; m. 15, c. 2. B.S, Purdue, 13, M.S, 17. Parke, Davis & Co, 13-, bioassay res, 23-.

ROWE, Walter Ellsworth, *Civil engineering.* Bristol, Ind, 9/18/75. B.S, Nebraska, 96. South Carolina, dean sch. eng, 22-41.

ROYAL, (Celestian) Lester, *Chemistry.* New Bavaria, O, 3/2/01; m. 30, c. 4. A.B, Indiana, 25, A.M, 43. Amino Prods. Co, sr. res. chem, 27-45; Gen. Mills, Inc, 45-.

ROYER, Alto E(ldo), *Agronomy, Soil science.* Coalmont, Ind, 9/19/17; m. 46. B.S, Purdue, 41, M.S, 47. Ala. Poly. Inst, exp. sta, asst. prof, 47-.

RUBENKOENIG, H(arry), *Mechanical engineering.* Graham, Tex, 3/29/84; m. 07, c. 2. B.S, A. and M. Col. (Tex.), 04; M.E, Purdue, 17. Purdue, instr. to prof; ry. eng, 14-.

RUDERT, F(rank) J(oseph), *Bacteriology.* Swan Lake, N. Y, 2/2/17. A.B, Cornell, 37, Ph.D, 40. Commercial Solvents Corp. (Terre Haute), res, 41-.

RUEGAMER, W(illiam) R(aymond), *Biochemistry.* Huntington, Ind, 12/15/22; m. 46. B.S, Indiana, 43; M.S, Wisconsin, 44, Ph.D, 48. Swift & Co, nutrition biochem, 48-.

RUNDLES, (Ralph) Wayne, *Internal medicine.* Urbana, Ill, 9/10/11; m. 36, c. 3. A.B, DePauw, 33; Ph.D, Cornell, 37; M.D, Duke, 40. Duke, asst. prof, 45-.

RUNNER, Meredith N(oftzger), *Embryology.* Schenectady, N. Y, 1/7/14; m. 41, c. 6. A.B, Indiana, 37, Ph.D, 42. Roscoe B. Jackson Mem. Lab, 46-, res. assoc, 48-.

RUPEL, I(saac) Walker, *Dairy husbandry.* Walkerton, Ind, 5/30/00. B.S, Illinois, 23; M.S, Wisconsin, 24, Ph.D, 32. Wisconsin, 24-, assoc. prof, 41-.

RUPP, V(irgil) R(ichard), *Food chemistry.* Quincy, Ill, 11/26/00; m. 31, c. 2. B.S, Quincy Col, 21; M.S, Catholic, 23. Kingan & Co. (Indianapolis), dir. res, 36-.

RUSK, H(enry) P(erly), *Animal husbandry.* Rantoul, Ill, 7/19/84; m. 11, c. 2. B.S, Valparaiso, 04; B.S, Missouri, 08, M.S, 11. Purdue, exp. sta, 09-10; Illinois, 10-, prof, 18-, dean col, agr, 39-.

RUSSELL, James H(ershey), *Psychology.* Pittsburgh, Pa, 3/26/98. A.B, Allegheny Col, 21; A.M, Columbia, 26; Ph.D, Indiana, 40. Miami (O.), assoc. prof, 30-; Sperry Gyroscope Co, 42-.

RUSSELL, Raymond G(ilbert), *Spectroscopy.* Crivets, Wis, 6/12/15; m. 42, c. 2. B.A, Millikin, 37; M.S, Purdue, 39, Ph.D, 42. Gulf Res. & Develop. Co; (Pittsburgh), 44-.

RUTH, Elbert B(resee), *Anatomy.* Los Angeles, Calif, 3/19/02; m. 28, c. 4. A.B, Indiana, 27; A.M, Wisconsin, 29, Ph.D, 31. Cincinnati, 38-47, assoc. prof, 47-.

RUTH, W(arren) A(lbert), *Horticulture.* St. Joseph Co, Ind, 5/23/84, died, 49. A.B, Wabash Col, 06, A.M, 09; Ph.D, Illinois, 19. Wabash Col, instr, 08-09; Illinois, 19-, prof, 27-.

RUTHRUFF, Robert F(reeborn), *Chemistry.* Huron, O, 7/25/02. B.S, Michigan, 24, M.S, 25, Ph.D, 27. Standard Oil Co. Ind, 28-36; Sherwin-Williams Co, 39-.

RUTLEDGE, Philip C(asteen), *Civil engineering, Soil mechanics.* Champaign, Ill, 2/17/06. B.S, Harvard, 27, Sc.D, 39; M.S, Mass. Inst. Tech, 33. Purdue, assoc. prof. to prof, 37-.

RYANS, David G(arriott), *Psychology.* Jeffersonville, Ind, 7/29/09. A.B, DePauw, 32; Ph.D, Minnesota, 37. California L. A, 48-.

RYANT, Charles J(oseph), Jr, *Engineering.* Chicago, Ill, 4/1/20. B.S, Armour Inst. Tech, 40; M.S, Ill. Inst. Tech, 41, Ph.D, 47. Standard Oil Co. Ind. (Whiting), 43-.

RYORS, Alfred, *Mathematics.* Philadelphia, Pa, 6/23/1812, died, 58. A.B, Jefferson, 35. Ohio (Athens), prof, 36-43; Indiana, prof, 44-48, pres, 52-53.

SABBAGH, E(lias) M(orshed), *Electrical engineering.* Zahle, Lebanon, 2/4/02, nat, 30; m. 31, c. 4. B.E.E, Ohio State, 26; M.S, Mich. State Col, 28; Ph.D, Purdue, 34. Purdue, 29-, prof, 47-.

SACHS, Robert G(reen), *Theoretical physics.* Md, 5/4/16. Ph.D, Hopkins, 39. Purdue, instr, 41-.

SACKETT, R(obert) L(emuel), *Engineering.* Mt. Clemens, Mich, 12/2/67, died, 46. B.S, Michigan, 91, C.E, 96, D.E, 37. Earlham Col, 91-07, prof, 96-07; Purdue, prof, 07-15; Pa. State Col, dean, 15-37.

SAFFORD, H. R(obinson), *Engineering.* Madison, Ind, 2/7/75. B.C.E, Purdue, 95, C.E, 17, D.E, 19. Grand Trunk Ry, ch. eng, 11-18; Mo. Pacific Lines, exec. v.p, 25-.

SALE, J(ohn) W(alter), *Chemistry.* Axtell, Kans, 8/29/83. A.B, DePauw, 07; A.M, Ohio State, 09. U. S. Dept. Agr, 10-21; Fed. Security Agy, ch, beverage branch, 21-.

SALIT, P(eter) W(aldemar), *Ophthalmology.* Latvia, 5/31/83. A.B, Valparaiso, 18; M.S, Iowa, 27, Ph.D, 29. Iowa, Univ. Hosp, res, 31-.

SALLER, Henry A(ndrew), *Metallurgy.* Kendallville, Ind, 4/16/18; m. 45, c. 1. B.S, Purdue, 40. Battelle Mem. Inst, res, 41-, asst. super, 47-.

SALTER, Robert M(undhenk), *Agronomy.* Huntington, Ind, 3/31/92; m. 17, c. 4. B.S.A, Ohio State, 13, M.S, 14. Ohio State, prof, 29-40; U. S. Bur. Plant Indust, ch, 42-.

SAMFIELD, Max (Marcus), *Chemical engineering.* Memphis, Tenn, 4/20/18; m. 44, c. 2. B.S, Rice Inst, 40; M.S, Texas, 41, Ph.D, 45. Servel, Inc. (Evansville), 47-.

SAMPLE, James H(alverson), *Organic chemistry.* Cicero, Ill, 2/27/14. B.S, Elmhurst Col, 35; M.S, Illinois, 36, Ph.D, 39. Ind. Cent. Col, prof, 39-42; Franklin Col, prof, 42-.

SAMPSON, Milo Bostwick, *Physics.* Erie, N. Dak, 6/18/08; m. 37, c. 1. B.S, State Col. Wash, 31, M.S, 33; Ph.D, Princeton, 37. Indiana, 46-, in chg. cyclotron res, 46-, assoc. prof, 49-.

SAMSON, R(ayburn) W(alter), *Botany.* Oconto, Nebr, 4/18/01; m. 27, c. 3. B.S, Nebraska, 26, M.S, 27; Ph.D, Purdue, 32. Purdue, asst, exp. sta, 32-, prof, 40-.

SAMUELS, Leo T(olstoy), *Biochemistry.* Indianapolis, Ind, 11/15/99; m. 35. A.B, Emmanuel Col, 25; Ph.D, Chicago, 30. South. California, 34-37; Minnesota, 37-44; Utah, prof, 44-.

SANDERS, T(homas) Kemper, *Mechanical engineering.* Muncie, Ind, 7/16/95; m. 22, c. 1. B.S, Purdue, 20, M.E, 35. Purdue, prof, 36-, in chg. ry. testing lab, 43-.

SANDERS, W(illiam) B(urton), *Mechanical engineering.* Wellington, Ill, 12/2/93; m. 15, c. 2. B.S, Purdue, 19, M.S, 22. Purdue, 18-, prof, 44-.

SANDERS, W(illia)m H(oward), *Physics.* Rensselaer, Ind, 2/20/99; m. 34, c. 2. A.B, Illinois, 20, A.M, 22, Ph.D, 26. Earlham Col, prof, 25-26; U. S. Naval Res. Lab, 35-.

SANDGROUND, J(ack) H(enry), *Helminthology.* Johannesburg, S. Africa, 2/2/99, nat, 31; m. 29, c. 1. B.Sc, South Africa, 19, M.Sc, 20; Sc.D, Hopkins, 25. Harvard, 25-38, asst. prof, 33-38; Eli Lilly & Co. (Indianapolis), parasitol, 39-47.

SANTELLI, Thomas Robert, *Organic chemistry.* Pittsburgh, Pa, 1/20/23; m. 45. B.S, Westminster Col. (Penn), 44; M.S, Purdue, 46, Ph.D, 48. Purdue, 46-.

SAPPENFIELD, Bert R(eese), *Psychology.* Ind, 1/2/12; m. 37, c. 1. B.A, DePauw, 35; M.A, N. Y. U, 38, Ph.D, 41. Montana, 41-, assoc. prof, 48-.

SARBER, R(aymond) W(illiam), *Medical bacteriology.* Hammond, Ind, 4/15/16; m. 37, c. 1. A.B, West. Mich. Col, 38; M.S, Cincinnati, 41. Parke, Davis & Co, res. bact, 42-.

SASHOFF, Stephan P(encheff), *Electrical engineering.* Grad Drenovo, Bulgaria, 9/22/01, nat, 30; m. 37. B.S, Purdue, 25; M.S, Pittsburgh, 29. Florida, 32-, prof, 46-.

SATTER, George A(lbert), *Psychology.* Waterloo, Ill, 11/17/15; m. 40, c. 2. B.S, Illinois, 37, A.M, 38; Ph.D, Purdue, 44. Michigan, asst. prof, 46-.

SATTERFIELD, H(oward) E(rnest), *Mechanical engineering.* Fairmount, W. Va, 5/11/77, died, 44. B.S, Purdue, 04, M.E, 09. N. C. State Col, prof, 08-20, 31-44.

SAUNDERS, Robert H(arris), *Chemistry.* Gary, Ind, 9/27/14; m. 43. A.B, Illinois, 37; M.S, Ill. Inst. Tech, 41, Ph.D, 44. Hercules Powder Co, 43-.

SAVAGE, Wesley A(lexander), *Chemical engineering.* Paulding, O, 8/1/07; m. 37, c. 2. B.S, Purdue, 32. Sinclair Ref. Co. (Ind.), 32-36; Standard Oil Co. Ind, 36-42; Battelle Mem. Inst, res, 45-.

SAWDON, W(ill) M(iller), *Experimental engineering.* Aurora, Ind, 1/1/73. B.S, Purdue, 98; M.M.E, Cornell, 08. Cornell, 04-41, prof, 19-41.

SAWIN, H(orace) J., *Paleontology.* Waynesville, O, 12/2/10; m. 33, c. 5. B.A, Earlham Col, 34; M.A, Harvard, 36, Ph.D, 40. Houston, prof. biol, 47-.

SAWYER, Leon R(andolph), *Civil engineering.* Manchester, N. H, 6/15/07; m. 33, c. 3. B.S, New Hampshire, 30. U. S. Geol. Surv, Ind, 42-46.

SAYERS, Royd Ray, *Preventive medicine.* Crothersville, Ind, 10/25/85; m. 23, c. 1. B.A, M.A, Indiana, 07; M.D, Buffalo, 14. U. S. Pub. Health Serv, med. dir, 13-33; U. S. Bur. Mines, dir, 40-47.

SAYLER, Henry B(enton), *Ordnance engineering.* Huntington, Ind, 11/4/93; m. 17, c. 3. B.S, U.S. Mil. Acad, 15. U. S. A, ch. res. and develop. div, 46-.

SAYRE, Charles B(ovett), *Horticulture.* Chicago, Ill, 1/3/91. B.S, Illinois, 13, M.S, 24. Purdue, 14-17; N. Y. Exp. Sta. (Geneva), 25-, prof, 28-.

SCANLON, Wayne Walter, *Physics.* Youngstown, O, 3/21/16; m. 49. B.S, Wayne, 38, M.S, 39; Ph.D, Purdue, 48. Purdue, instr, 43-48; Naval Ordnance Lab, ch. subdiv. infra-red, 48-.

SCARSETH, George D(ewey), *Soil chemistry.* Falesville, Wis, 10/7/98; m. 26, c. 2. B.S, Wisconsin, 24; Ph.D, Ohio State, 35. Ala. Poly. Inst, 28-38; Purdue, prof, 38-44, head dept. agron, 43-44; Am. Farm Res. Assn, dir. res, 44-. Soil Sci. Soc. (pres, 36). Soils as related to animal health.

SCHAAF, S(amuel) A(lbert), *Mathematics engineering.* Ft. Wayne, Ind, 1/26/18; m. 43, c. 1. A.B, California, 39, Ph.D, 44. California, asst. prof, 47-.

SCHAAFSMA, B(ernard) R(ichard), *Chemistry.* Grand Rapids, Mich, 6/14/19; m. 43, c. 1. A.B, Calvin Col, 41; M.A, Indiana, 42, Ph.D, 44. Colgate-Palmolive-Peet Co, 46-.

SCHAEFFER, Albert Charles, *Mathematics.* Belvidere, Ill, 8/13/07; m. 31, c. 3. B.S, Wisconsin, 30; Ph.D, Mass. Inst. Tech, 36. Purdue, 36-, prof, 47-.

SCHAEFFER, Harold F(ranklin), *Chemistry.* Philadelphia, Pa, 9/21/99; m. 32. B.Sc, Muhlenberg Col, 22; M.Sc, New Hampshire, 26. Alabama, 44-48; Valparaiso, 48-.

SCHAFER, E(arl) R(ogers), *Chemical engineering.* Liberty, Ind, 4/25/92; m. 18, c. 2. B.Ch.E, Ohio State, 17. U. S. Forest Serv, forest prods. lab, 21-.

SCHAFFNER, Irwin J(oseph), *Chemistry.* Wheeling, W. Va, 5/1/20; m. 43. B.S, Notre Dame, 41, M.S, 42, Ph.D, 44. U. S. Rubber Co, res, 46-.

SCHAFFNER, Robert M(ichael), *Chemical engineering.* Brooklyn, N. Y, 1/30/15; m. 40, c. 2. B.Ch.E, Poly. Inst. Brooklyn, 36; M.S, W. Virginia, 39; Ph.D, Pittsburgh, 41. Standard Oil Co. Ind, 41-43; Libby, McNeill & Libby, 45-.

SCHAUER, Paul Constantine, *Aerial mapping.* Indianapolis, Ind, 12/5/11; m. 39, c. 3. City Water Works, Ft. Wayne, 34-35; U.S.A.F. Aeronaut. Chart Serv, commanding officer.

SCHEELE, Leonard A(ndrew), *Surgery, Medicine.* Ft. Wayne, Ind, 7/25/07; m. 29, c. 3. A.B, Michigan, 31; B.S, Wayne, 33, M.D, 34. U. S. Pub. Health Serv, 46-, surgeon gen, 48-.

SCHELBERG, Arthur D(aniel), *Physics.* N. Y. C, 3/8/21; m. 44, c. 2. A.B, Princeton, 42; M.S, Indiana, 48. Indiana, 46-.

SCHEPARTZ, Abner I(rwin), *Chemistry.* N. Y. C, 7/29/22. B.S, Purdue, 43. Pittsburgh, 46-.

SCHERER, George A(llen), *Chemistry.* Kokomo, Ind, 4/3/07; m. 29, c. 3. B.S, Earlham Col, 27; M.S, Cornell, 28; Ph.D, Purdue, 33. Earlham Col, 36-, asst. prof. to assoc. prof, 36-.

SCHICK, John William, *Chemistry.* Camden, N. J, 11/28/18; m. 44, c. 2. A.B, La Salle Col, 40; M.S, N. Y. U, 43; Ph.D, Purdue, 46. Socony-Vacuum Oil Co, 45-.

SCHICKS, Geo(rge) C(harles), *Pharmacy.* Munson, Mass, 5/11/93; m, c. 2. Ph.G, Mass. Col. Phar, 19; Ph.C, Valparaiso, 21; Sc.D, R. I. Col. Phar. & Allied Sci, 41. Valparaiso, prof, 20-27, dean, 25-27; Rutgers, prof, 28-.

SCHILLING, Geo(rge) S(ilas), *Bacteriology.* Brillion, Wis, 1/21/96; m. 17, c. 2. B.S, Arkansas, 24; M.S, Mich. State Col, 27. Pitman-Moore Co. (Ind.), asst. dir. biol. lab, 36-.

SCHIMPFF, G(ustave) Weber, *Chemistry.* Jeffersonville, Ind, 11/7/06. B.S, Louisville, 28; M.S, Chicago, 30, Ph.D, 34. Cook County Hosp. (Chicago), dir. dept. biochem, 38-.

SCHIPPER, Arthur L(ouis), *Zoology.* Maquoketa, Ia, 9/14/09; m. 37, c. 3. A.B, Coe Col, 30; M.S, Iowa, 32, Ph.D, 37. Notre Dame, asst. prof, 48-.

SCHLAUDECKER, George F(rederick), *Chemical engineering.* Erie, Pa, 2/10/17; m. 40, c. 3. B.S, Notre Dame, 38; M.S, Mass. Inst. Tech, 39. Toledo, asst. prof, 47-.

SCHLESINGER, Kurt, *Physics.* Berlin, Germany, 4/20/06. Dipl-Eng, Berlin Technische Hochschule, 28, Dr.Eng, 29. Radio Corp. Am, Purdue Res. Found, television res, 41-.

SCHLOSBERG, Morris, *Entomology.* N. Y. C, 12/25/99; m. 33, c. 1. B.Sc, Ohio State, 25, M.Sc, 26. Purdue, exp. sta, 42-.

SCHMELZLE, A(mbrose) F(rancis), *Physical chemistry.* Forestville, Wis, 2/1/15; m. 47. B.S, St. Mary's Col. (Minn.), 36; M.S, Creighton, 38; Ph.D, Indiana, 40. Minn. Mining & Mfg. Co. (St. Paul), 44-.

SCHMIDT, Frederic C(owles), *Chemistry.* New Haven, Conn, 2/19/04; m. 31, c. 2. Sc.B, Brown, 27, Sc.M, 28, Ph.D, 31. Indiana, assoc. prof, 47-.

SCHMIDT, L(eon) H(erbert), *Medicine.* Huron, O, 6/28/09; m. 32, c. 2. B.A, DePauw, 29; M.S, Cincinnati, 30, Ph.D, 32. Cincinnati, 32-, asst. prof, 37-44, dir. res, 38-, assoc. res. prof, 44-.

SCHMIDT, M(aurice) R(oland), *Chemistry.* Baltimore, Md, 12/3/85; m. 15, c. 1. A.B, Hopkins, 06, Ph.D, 09. Standard Oil Co. Ind, 17-, gen. supt, 43-.

SCHMIDT, William H(oward), *Bacteriology, Parasitology.* Manawa, Wis, 11/18/17; m. 40, c. 2. B.A, Lawrence Col, 39; M.S, Illinois, 42. Schenley Labs, Inc. (Lawrenceburg, Ind.), head chem. labs, 45-.

SCHMITKONS, G(eorge) E(dwin), *Organic chemistry.* Lorain, O, 12/26/11; m. 34, c. 1. A.B, Oberlin Col, 33; Ph.D, Ohio State, 37. Standard Oil Co. Ind, 37-, group leader, 48-.

SCHNETZLER, E(still) E(verett), *Poultry genetics.* Salisbury, Mo, 6/24/06; m. 30, c. 4. B.S.A, Missouri, 28, M.A, 30; Ph.D, Iowa State Col, 43. Purdue, 31-45, assoc. prof, 42-45; DeKalb Hybrid Seed Co, 45-.

SCHOCKEL, Bernard Henry, *Geography.* Aurora, Ind, 12/15/87; m. 46. S.B, Chicago, 10, A.M, 11, Ph.D, 46. Ind. State Teachers Col, prof, 13-35. Manufacturing in Evansville.

SCHOENBORN, Henry W(illiam), *Biology.* Connersville, Ind, 12/21/12; m. 37, c. 2. A.B, DePauw, 33; Ph.D, N. Y. U, 39. Georgia, 45-, assoc. prof, 47-.

SCHOENHERR, Karl E(rnest), *Engineering.* Karlsruhe, Germany, 12/29/93, nat, 21; m. 30, c. 1. B.S, Mass. Inst. Tech, 22; M.A, Geo. Washington, 30; D.Eng, Hopkins, 32. Notre Dame, dean col. eng, 45-.

SCHOEPFLE, G(ordon) M(arcus), *Physiology.* Louisville, Ky, 6/11/15; m. 42, c. 1. A.B, DePauw, 37; A.M, Princeton, 39, Ph.D, 40. Washington (St. Louis), 41-, asst. prof, 46-.

SCHOOLEY, J(ames) P(lummer), *Zoology.* Geneva, Ind, 5/8/04, died, 46. A.B, Indiana, 29, Ph.D, 34. Ind. high schs, 25-30; Difco Labs, Inc, 39-46.

SCHOONOVER, Warren R(ippey), *Agriculture.* Warsaw, Ind, 2/6/91. B.S, Occidental Col, 12; M.S, Illinois, 16. Specialist, soils, 39-.

SCHOPMEYER, C(lifford) S(charff), *Plant physiology.* Center Point, Ind, 8/12/11; m. 37, c. 1. B.S, Geo. Washington, 33; M.S, Maryland, 35; Ph.D, Duke, 37. U. S. Forest Serv, 39-.

SCHORLING, Raleigh, *Education, Mathematics.* Morris, Ind, 8/15/87; m. 16, c. 3. A.B, Michigan, 11; M.S, Chicago, 14; Ph.D, Columbia, 25. Ind. pub. schs, 04-07; prin, Ind. high schs, 07-08; Michigan, prof, 26-.

SCHRADER, H(erman) J(ohn), *Mechanical engineering.* Lafayette, Ind, 9/11/01; m. 26, c. 3. B.S, Purdue, 23; M.S, Illinois, 37. Illinois, 25-, assoc. prof, 39-42, res. prof, 42-.

SCHRADER, R(obert) J., *Chemical engineering.* South Bend, Ind, 10/27/18; m. 42, c. 2. B.S, M.S, Purdue, 40; Sc.D, Mass. Inst. Tech, 43. Tenn. Eastman Corp, sr. eng, 46-.

SCHRAMM, J(acob) R(ichard), *Botany* (starred). Hancock Co, Ind, 2/6/85; m. 13. A.B, Wabash Col, 10; Ph.D, Washington (St. Louis), 13. Cornell, 15-25, prof, 17-25; Pennsylvania, prof, 37-. Bot. Soc. Am. (pres, 25).

SCHREIBER, R(aemer) E(dgar), *Physics.* McMinnville, Ore, 11/11/10; m, c. 2. B.A, Linfield Col, 31; M.A, Oregon, 32; Ph.D, Purdue, 41. Purdue, instr, 37-43; Los Alamos Sci. Lab, 43-.

SCHREIBER, R(ichard) S(eyfarth), *Organic chemistry.* Blue Island, Ill, 10/15/09; m. 33, c. 2. A.B, Wabash Col, 31; Ph.D, Illinois, 35. Dupont Co. Exp. Sta, 35-, res. super, 39-.

SCHROCK, Alta (Elizabeth), *Plant ecology.* Grantsville, Md. A.B, Waynesburg Col, 37; M.A, Kent State, 39; Ph.D, Pittsburgh, 44. Goshen Col. (Ind.), assoc. prof, 46-.

SCHROCK, Robert D., *Orthopedic surgery.* Delaware, O, 8/22/84; m. 35, c. 1. A.B, Wabash Col, 05; M.D, Cornell, 12. Nebraska, prof, 40-.

SCHROEDER, W(ilburn), *Chemical engineering.* Tell City, Ind, 3/22/06; m. 45, c. 1. B.S, Michigan, 30; M.S.E, 31, Ph.D, 33. U. S. Bur. Mines, synthetic liquid fuels, 33-.

SCHUCK, Cecilia, *Nutrition.* Louisville, Ky, 1/26/98. A.B, Ind. State Teachers Col, 22; M.S, Minnesota, 23; Ph.D, Chicago, 34. Purdue, 36-, prof, 46-.

SCHUH, R(ichard) E(dwin), *Botany.* Kent, Ind, 11/17/60, died, 39. A.B, Hanover Col, 82, A.M, 85; A.M, Harvard, 94. Howard, 07-39, prof. geol, 22-39.

SCHULTZ, Oscar (John) T(heodore), *Pathology, Medicine.* Mt. Vernon, Ind, 9/28/77, died, 47. A.B, Indiana, 93; M.D, Hopkins, 03. Michael Reese Hosp, dir, 16-29; St. Francis Hosp. (Evanston), labs, 29-.

SCHULZE, John O(tto), *Metallurgy.* Iowa City, Ia, 2/17/19. B.S, Notre Dame, 39; M.S, Iowa, 40. Battelle Mem. Inst, res, 47-.

SCHUSTER, Geo(rge) L(ee), *Agronomy.* Middletown, Ind, 5/25/91; m. 17, c. 2. B.S, Ohio State, 16; M.S, 18. Delaware, 19-, dean and dir. exp. sta, 39-48, dean sch. agr, 48-.

SCHWARTZ, Donald I., *Chemical and metallurgical engineering.* Ft. Wayne, Ind, 4/3/13; m. 40, c. 2. B.S, Michigan, 35, M.S, 36. Carboloy Co. (Detroit), res, 45-.

SCHWARTZ, Harry A(dolph), *Metallurgy.* Oldham Co, Ky, 4/13/80. B.S, Rose Poly Inst, 01, M.S, 03, M.E, 05, Chem.E, 31. Natl. Malleable, Casting Co. (Indianapolis), 02-, mgr. res, 20-.

SCHWARZ, A(lexander) John, *Pharmacognosy.* 12/31/98, died, 44. B.S, Wisconsin, 22, Ph.D, 31. Eli Lilly & Co, 22-27; Tennessee, 27-44, prof, 36-44.

SCHWEIGER, L(eonard) B(rudy), *Bacteriology.* Lafayette, Ind, 11/4/10; m. 33, c. 2. B.S, Purdue, 36, M.S, 38, Ph.D, 46. Miles Labs. (Elkhart, Ind.), head dept, 46-.

SCHWEIGERT, G(eorge) E(arl), *Mathematics.* York, Pa, 11/13/07; m. 40. B.S, Washington and Jefferson Col, 29; Ph.D, Hopkins, 34. Purdue, asst. prof, 43-47; Pennsylvania, assoc. prof, 47-.

SCOATES, D(aniels), *Agricultural engineering.* Crown Point, Ind, 1/27/82; died, 39. B.S, Iowa State, 10, A.E, 15. Miss. Agr. Col, prof, 10-19; Texas Col, prof, 19-39. Agr. Eng. (pres, 18).

SCOBEY, E(llis) H(urlbut), *Geology.* Carrolls, Wash, 9/15/11. A.B, Cornell Col, 33; M.S, Iowa, 35, Ph.D, 38. Gulf Ref. Co. (Indianapolis), 38-.

SCOBEY, Fred C(harles), *Engineering.* Greensburg, Ind, 80; m. 06, c. 1. A.B, (C.E), Stanford. U. S. Dept. Agr, sr. irrig. eng, 11-46.

SCOFIELD, H(erbert) H(enry), *Engineering.* Bemus Point, N. Y, 10/5/80; m. 07, c. 4. M.E, Cornell, 05. Purdue, 05-18; Cornell, prof, 19-.

SCOFIELD, Herbert T(emple), *Plant physiology.* West Lafayette, Ind, 5/16/09; m. 45, c. 1. A.B, Cornell, 30, Ph.D, 37. Ohio State, 37-43, asst. prof, 40-43; N. C. State Col, 46-, prof, 49-.

SCORAH, R(alph) L(ouis), *Mechanical engineering.* Kokomo, Ind, 10/29/01. B.S, Purdue, 24, M.S, 25, M.E, 32; Ph.D, Illinois, 32. Missouri, 35-, prof, 42-.

SCOTT, Charles C(overt), *Pharmacology.* Sparta, Ill, 1/18/09; m. 33, c. 2. B.S, Mo. Valley Col, 29; Ph.D, M.D, Chicago, 37. Eli Lilly & Co, 41-48; Inlow Clinic (Shelbyville, Ind.), internist, 48-.

SCOTT, Donald C(harles), *Fisheries biology.* Washington, D. C, 1/6/20; m. 42. B.S, Michigan, 42; Ph.D, Indiana, 47. Georgia, instr, 47-.

SCOTT, E(verett) L(ee), *Animal husbandry.* Mineral Wells, Tex, 11/18/96. B.S, Colorado, 23; B.S.A, Colo. Agr. Col, 23; M.S, Iowa State Col, 24; Ph.D, Purdue, 30. Arizona, 30-, prof, 36-37; West. Farm Mgt. Co, 37-.

SCOTT, Frank Walton, *Metallurgy.* Greenfield, Ind, 3/25/03; m. 27, c. 4. B.S, Purdue, 25; M.S, Minnesota, 37, Ph.D, 41. Inland Steel Co, 28-36; Minnesota, 36-42, asst. prof, 41-42; Marquette Mfg. Co, 42-.

SCOTT, J(ohn) B(radford), *Chemical engineering.* New Albany, Ind, 11/30/10; m. 33, c. 2. B.S, Louisville, 32, M.Ch. E, 40. Phillips Chem Co, 46-.

SCOTT, J(ohn) P(aul), *Zoology.* Kansas City, Mo, 12/17/09. A.B, Wyoming, 30; B.A, Oxford, 32 (Rhodes Scholar); Ph. D, Chicago, 35. Wabash Col, 35-45, prof, 42-45; R. B. Jackson Labs. (Bar Harbor, Me.), 45-.

SCOTT, K. Frances, *Hygiene.* Vincennes, Ind, 4/16/90. Ph.B, Col. Wooster, 12; M.D, Rush, 17. Smith Col, assoc. prof, 27-.

SCOTT, Louis Mollyneaux, *Horticulture.* Logansport, Ind, 3/4/86, died, 45. A.B, Lake Forest Col, 09; B.S, Winona Col, 12. U. S. Dept. Agr, 21-45.

SCOTT, M(yrtle) Gladys, *Physical education.* Buckley, Ill, 10/26/05. B.A, DePauw, 27; M.A, Iowa, 31, Ph.D, 37. Iowa, prof, 34-.

SCOTT, Roy Wesley, *Clinical medicine.* New Albany, Ind, 3/20/88; m. 14, c. 1. A.B, Indiana, 10; M.D, West. Reserve, 13, A.M, 17. West. Reserve, 15-, prof, 29-.

SCOTT, V(irgil) Brown, *Medicine, Physiology.* Sparta, Ill, 7/4/06; m. 31. A. B, Lawrence Col, 27; Ph.D, Chicago, 34, M.D, 35. Indiana, asst. prof, 37-42; Inlow Clinic (Shelbyville, Ind.), 42-.

SCOTT, Will, *Zoology.* Houston, Ind, 4/20/77, died, 37; m. 07, c. 1. A.B, A.M, Indiana, 08; Ph.D, 11. Indiana, 08-37, prof, 21-37. Ind. Acad. Sci. (pres, 35). Limnology.

SCOVELL, J(osiah) T(homas), *Botany.* Vermontville, Mich, 7/29/41, died, 15; m. 76. A.B, Oberlin Col, 66, A.M, 72; M.D, Rush, 69. Ind. State Nor. Sch, prof, 72-81; Terre Haute high schs, 94-15. Geology of Vigo County in State Survey Report 1895; biological survey of Lake Maxinkuckee (15 summers) with Evermann.

SCULL, C(harles) Wesler, *Biochemistry.* Richmond, Ind, 7/31/05; m. 29, c. 2. B.S, Earlham Col, 26; M.S, Illinois, 27, Ph.D, 30. Pennsylvania, 37-, assoc. prof, 47-.

SEALE, Alvin, *Ichthyology.* Fairmount, Ind, 7/8/73. A.B, Stanford, 96. Calif. Acad. Sci, supt. Aquarium, 23-41.

SEAMSTER, Aaron Presley, *Zoology.* Sulphur Springs, Ark, 6/24/15; m. 36, c. 2. B.S, Okla. A. & M. Col, 37, M.S, 38; Ph.D, Notre Dame, 48. Del Mar Col, chm. dept, 48-.

SEARLES, P(aul) J(ohn), *Physics.* Huntington, Ind, 12/5/91. B.S, U. S. Naval Acad, 13; C.E, Rensselaer Poly. Inst, 18. Carnegie-Ill. Steel Corp, 42-.

SEARS, James Francis, *Physics.* Lapel, Ind, 1/13/12; m. 33, c. 2. B.S, Purdue, 32, M.S, 34. Evansville Col, head dept, 46-.

SEARS, O(gle) H(esse), *Agronomy.* Oblong, Ill, 5/24/92; m. 15, c. 2. B.S, Illinois, 14, Ph.D, 28; M.S.A, Purdue, 14. Purdue, asst. chem, 14-20, asst. prof. agr. chem, 17-20; Illinois, asst. prof. to prof. soil biol, 22-.

SEASTONE, John B(outon), *Electrical engineering.* Lafayette, Ind, 3/11/05; m. 31, c. 2. B.S, Wisconsin, 26. Westinghouse Elec, 26-, mgr. magnetic sect, 30-37, super. chem. and physical lab, 37-.

SEBEOK, Thomas A(lbert), *Linguistics.* Budapest, Hungary, 11/9/20, nat; m. 47. B.A, Chicago, 41; M.A, Princeton, 43, Ph.D, 45. Indiana, asst. prof, 43-.

SECRIST, Mark H(oward), *Geology.* Hanover, Pa, 9/27/96; m. 30. A.B, Gettysburg Col, 18; Ph.D, Hopkins, 23. Earlham Col, prof, 47-.

SEEBOLD, James E(dward), *Chemical engineering.* Shelbyville, Ky, 5/7/14; m. 44. B.S, Kentucky, 34, M.S, 35; D. Sc, Mass. Inst. Tech, 39. Standard Oil Co. Ind, 40-, asst. dir. res. petrol. ref, 45-.

SEELIG, Herman S., *Chemistry.* Little Rock, Ark, 10/29/15; m. 39, c. 3. B.S, Arkansas, 36; M.S, Ga. Inst. Tech, 38; Ph.D, Minnesota, 41. Standard Oil Co. Ind, 47-.

SEIFERT, R(alph) L(ouis Edwin), *Physical chemistry.* Mt. Vernon, Ind, 2/4/14; m. 38, c. 1. A.B, Evansville Col, 34; A.M, Illinois, 35, Ph.D, 37. Indiana, assoc. prof, 49-.

SEIGLE, Leon William, *Organic chemistry.* Clarksville, Ind, 3/6/10; m. 41. B.S, Arizona, 35, M.S, 36; Ph.D, Purdue, 39. Allied Chem. & Dye Corp, Natl. Aniline Div, 39-.

SEILER, Wallace U(rban), *Chemical engineering.* Evansville, Ind, 8/31/14; m. 42. B.S, Purdue, 37. Dow Chem. Co, res, 37-.

SELLE, Raymond M(artin Louis), *Biology.* Ft. Wayne, Ind, 10/11/98; m. 20, c. 3. B.S, Occidental Col, 20; M.A, California, 21; Ph.D, South. California, 34. Occidental Col, 24-, prof, 39-.

SELLE, Wilbur Arthur, *Physiology, Biophysics.* Ft. Wayne, Ind, 5/30/02; c. 3. A.B, Occidental Col, 25; M.A, Stanford, 26, Ph.D, 29. Texas, 29-, prof, 43-, med. physics, 45-.

SELLEI-BERETVAS, Helen Maria, *Chemistry.* Hungary, 2/16/07; m. 35, c. 1. Dipl, Budapest, 30, Ph.D, 31. Standard Oil Co. Ind, 47-.

SELLERS, Glenn W., *Radio.* Barthell, Ky, 6/26/20. B.S, Kentucky, 44. Farnsworth Television & Radio Corp. (Ft. Wayne), 45-.

SELLERS, John A(lvan), *Chemistry.* Fostoria, O, 7/18/96. A.B, Manchester Col, 22; A.M, Illinois, 27, Ph.D, 30. Ind. high schs, 18-21; Mich. State Nor. Col, prof, 29-.

SELUND, Robert B(ernard), *Chemical engineering.* La Crosse, Wis, 1/25/07; m. 34, c. 1. B.S, Minnesota, 30. Standard Oil Co. Ind, 30-, group leader, 41-.

SERBIN, Hyman, *Mathematics.* Pittsburgh, Pa, 8/29/14; m. B.S, Carnegie Inst. Tech, 34; Ph.D, Pittsburgh, 37. Purdue, prof. aeronaut. eng, 47-.

SERVICE, Jerry H(all), *Physics.* New Carlisle, Ind, 6/12/88. B.S, Rose Poly. Inst. Tech, 12, E.E, 28; M.S, Ohio State, 17, Ph.D, 28. U. S. Coast and Geod. Surv, 23-28; Mich. Col. Min. and Tech, 32-, assoc. prof, 38-.

SERVICE, William Corr, *Medicine, Biology.* Greenfield, Ind, 11/30/01; m. 26, c. 3. A.B, Indiana, 23, M.D, 27. Colo. Col, 30-, assoc. prof, 40-.

SERVISS, Frederick L(eVerne), *Geology.* Telluride, Colo, 7/30/95; m. 20, c. 9. E.M, Colo. Sch. Mines, 20, M.S, 22. Purdue, 29-, prof, 35-.

SETON, Sister Elizabeth M(cDonald), *Biological science.* Washington, O, 2/6/92. A.B, Xavier (O.), 24; M.S, Notre Dame, 32, Ph.D, 37. Col. Mt. St. Joseph, 32-, prof, 37-.

SEULKE, Karl John, *Animal husbandry.* Seymour, Ind, 2/15/90; m. B.S, Purdue, 13; M.S, Pa. State Col, 14; Ph.D, Cornell, 16. Cornell, prof, 18-20; Ralston Purina Co, 28-34; Co-operative Feed Dealers, Inc, nutrition, 45-.

SEVERINGHAUS, Aura E(dward), *Cytology.* Jeffersonville, Ind, 5/5/94; m. 23. B.S, Columbia, 16, A.M, 19, Ph.D, 27. Columbia, 27-, assoc. prof, 39-, assoc. dean, 45-.

SEVERINGHAUS, W(illard) L(eslie), *Physics.* Terre Haute, Ind, 1/28/82, died, 47. A.B, Baldwin-Wallace Col, 04, A.M, 05; Ph.D, Columbia, 14. Moores Hill Col. (Ind.), prof, 04-07; Columbia, 11-41, assoc. prof, 29-41.

SEVRINGHAUS, Elmer L(ouis), *Endocrinology.* New Albany, Ind, 2/9/94; m. 18, c. 3. B.A, Wisconsin, 16, M.A, 18; M.D, Harvard, 21. Wisconsin, 21-46, prof, 38-46; Hoffman-La Roche, Inc, dir. clin. res, 46-.

SEYBERT, John E., *Botany.* Orland, Ind, 1/4/90; m. 12. Ph.C, Purdue, 11. Eli Lilly & Co, 11-, head bot. dept, 34-.

SEYMOUR, Keith M(orton), *Organic chemistry.* Retreat, Wis, 11/5/03; m. 34, c. 2. B.S, Washington (Seattle), 26, M.S, 29, Ph.D, 33. Butler, prof, 46-.

SEYMOUR, Paul H(enry), *Chemistry.* La Porte, Ind, 7/25/69. B.S, Michigan, 92, M.S, 93. Illinois, Urbana U. Schs, head master, 08-.

SHADINGER, Guy H(oward), *Chemistry.* Glencoe, Minn, 8/24/77; m. 16, c. 2. Ph.B, Hamline, 00; Ph.D, Hopkins, 07. Butler, prof, 07-08, 20-37; Ind. Cent. Col, prof, 37-40, 47-48.

SHAEFER, W(illiam) E(rnest), *Chemistry.* Wolcottville, Ind, 5/4/96; m. 25, c. 3. A.B, Harvard, 18, A.M, 23, Ph.D, 26. Hercules Powder Co, res. chem, 25-.

SHAFER, Geo(rge) D(aniel), *Physiology, Entomology.* Muncie, Ind, 12/25/74; m. 12. A.B, Indiana, 00; A.M, Stanford, 06; Ph.D, Cornell, 08. Stanford, 18-40, prof, 39-40.

SHAFER, John (Irwin), Jr, *Plant physiology.* South Bend, Ind, 11/12/10; m. 38. A.B, Dartmouth Col, 33; Ph.D, Cornell, 36. Wisconsin, 48-.

SHAFFER, James G(rant), *Immunology.* Washington, Kans, 1/17/13. B.S, Manchester Col, 35; Sc.D, Hopkins, 40. Ind. high schs, 35-37; Hopkins, instr, 40-.

SHAFFNER, C(lyne) S(amuel), *Poultry.* Freeland, Mich, 4/18/14. B.S, Mich. State Col, 38, M.S, 40; Ph.D, Purdue, 47. Maryland, prof, 47-.

SHALUCHA, Barbara, *Horticulture.* Springfield, Vt, 12/9/15. Ph.B, Vermont, 37, M.S, 38; Ph.D, Ohio State, 47. Indiana, instr. bot, 47-.

SHAMBAUGH, Noel F(ranklin), *Applied physiology.* Ridgeville, Ind, 12/22/96; m. 23. B.S, Michigan, 20, M.D, 22, M.S, 26. South. California, asst. clin. prof, 32-.

SHANKLAND, Rodney V(eeder), *Chemistry.* Dixboro, Mich, 11/12/04; m, c. 2. B.S, Michigan, 46, M.S, 47, Sc.D, 30. Standard Oil Co. Ind, res, 30-, group leader, 37-.

SHANKLIN, H(enry) D(avis), *Psychology.* Ashland, Ky, 5/5/21; m. 45, c. 1. B.A, Kentucky, 42; M.S, Purdue, 47, Ph.D, 49. Louisiana, asst. prof, 49-.

SHANKS, John A(mos), *Chemistry*. Salem, Ind, 11/11/15; m. 38, c. 2. B.S, Indiana, 37; Ph.D, Hopkins, 42. Louisville Cement Corp. (Ind.), res. chem, 41-44; Dupont Co, 44-.

SHANKS, M(errill) E(dward), *Mathematics*. Mason City, Ia, 10/6/11; m. 38, c. 1. B.A, Iowa, 32, Ph.D, 36; M.A, Columbia, 33. Purdue, 46-, assoc. prof, 48-.

SHANNON, C(harles) W(illiam), *Geology*. Atlanta, Ind, 8/3/79, died, 34. A.B, Indiana, 06, A.M, 07. Ind. high schs, 08-11; Ind. Geol. Surv, 05-11; Okla. Geol. Surv, 11-34, dir, 14-34.

SHAPIRO, Edward, *Chemistry*. Philadelphia, Pa, 10/31/16; m. 39, c. 3. B.S, Pa. State Col, 37; Ph.D, Purdue, 42. Bartol Res. Found, 48-.

SHARP, Winford L(ee), *Psychology*. Brownsvalley, Ind, 3/24/90; m. 14. B.A, Franklin Col, 15; M.A, Chicago, 22, Ph.D, 28. Col. Wooster, 30-, prof, 31-.

SHAW, Clyde E(dgar), *Electronics*. W. Elizabeth, Pa, 12/5/11; m. 37, c. 2. B.Sc, Tri-State Col, 36; M.Sc, A. & M. Col. (Tex.), 42. Tri-State Col, 37-, head dept, 42-.

SHAW, Franklin J(ulius), *Psychology*. Peshtigo, Wis, 1/2/17; m. 40, c. 2. A.B, Illinois, 38; M.A, Michigan, 39; Ph.D, Iowa, 43. Purdue, assoc. prof, 49-.

SHAW, James B(yrnie), *Mathematics* (starred), Remington, Ind, 3/20/66, died, 48. B.S, Purdue, 89, M.S, 90, Sc.D, 93. Millikin, 03-10; Illinois, 10-33, prof, 18-33.

SHAW, John G(ilbert), *Entomology*. Columbia City, Ind, 5/17/08. A.B, Kansas, 30, A.M, 32. U. S. Dept. Agr, 30-.

SHAW, R(obert) William, *Astronomy*. Meadville, Pa, 7/7/04; m. 37, c. 3. B.S, Allegheny Col, 26; M.S, Purdue, 29; Ph.D, Cornell, 34. Purdue, instr, 26-29; Cornell, 29-, assoc. prof, 42-.

SHAW, William A., *Psychology*. Wood Station, O, 3/5/07; m. 36, c. 3. A.B, Indiana, 35, A.M, 37; Ph.D, Columbia, 40. Pennsylvania, 39-, asst. prof, 45-.

SHAWCROSS, Roy, *Chemistry*. Ambia, Ind, 2/4/96; m. 22, c. 5. A.B, Butler, 29. Ind. schs, 24-29; Aluminum Co. Am, res. chem, 30-43; Bioproducts Oreg, Ltd, ch. chem, 47-.

SHAY, J(unior) Ralph, *Plant pathology*. Bird City, Kans, 1/8/18; m. 43, c. 1. B.S, Arkansas, 39; M.A, Wisconsin, 41, Ph.D, 43. Purdue, asst. prof, 45-.

SHECHTER, Harold, *Chemistry*. N. Y. C, 7/12/21. B.S, South Carolina, 41; Ph.D, Purdue, 46. Ohio State, asst. prof, 46-.

SHEDRICK, Carl F(ranklin), *Chemical engineering*. South Bend, Ind, 8/2/20; m. 46, c. 1. B.S, Purdue, 42; M.S.E, Columbia, 48. Dupont Co, 42-.

SHEEDY, Joseph Willard, *Mathematics*. North Vernon, Ind, 1/10/01; m. 29, c. 3. A.B, Indiana, 23, M.A, 27. Mich. State Col, 23-46, assoc. prof, 44-46.

SHEEHAN, Robert J(ohn), *Cytology, Histology*. Langdon, N. Dak, 1/25/00. B.S, Notre Dame, 21, M.S, 27; B.S, St. Louis, 23. Notre Dame, assoc. prof, 45-.

SHEERAN, S(tanley) R(obert), *Synthetic resins*. Elizabeth, N. J, 11/19/16; m. 43, c. 2. B.S, St. Vincent Col, 38; M.S, Notre Dame, 39, Ph.D, 41. Dupont Co, 41-.

SHELLEY, Robert L(avere), *Physical chemistry*. Bluffton, Ind, 12/9/03; m. 34, c. 3. B.A, Indiana, 25, M.A, 28, Ph.D, 29. Ind. high schs, 33-43; Ball State Col, 43-, assoc. prof, 48-.

SHENK, D(onald) H(ugh), *Mechanical engineering*. Kokomo, Ind, 4/9/01; m. 29, c. 2. B.S, Purdue, 24, M.S, 40. Purdue, instr, 26-29; Alabama, prof, 43-.

SHEPARD, Edwin R(eed), *Organic chemistry*. Springfield, O, 6/24/17; m. 40, c. 2. A.B, Wittenberg Col, 38; Ph.D, Ohio State, 42. Eli Lilly & Co, 42-.

SHEPARD, John Wilberton, *Chemistry*. Winona, Minn, 1/18/21; m. 44, c. 1. B.A, Carleton Col, 42; Ph.D, Ohio State, 48. Standard Oil Co. Ind, 48-.

SHEPHERD, E(arnest) S(tanley), *Chemistry*. Remington, Ind, 3/30/79. A.B, Cornell, 02. Carnegie Institution, geophys. lab, 04-46.

SHERMAN, George W(illiam), *Chemical engineering*. Slocums, R. I, 4/8/90. B.S, R. I. State Col, 12; M.S, Purdue, 14. Purdue, 15-, assoc. prof, 25-49, prof, 49-.

SHERRARD, E(arl) C(harles), *Chemistry*. Montpelier, Ind, died, 44. Ph.C, Tri-State Col, 04; B.S, Michigan, 13, M.S, 15, Ph.D, 11. U. S. Forest Serv, Forest Prods. Lab, 17-.

SHERRICK, Paul (Henry), *Chemistry*. North Manchester, Ind, 2/11/99; m. 35. A.B, Mt. Morris Col, 20; M.S, Michigan, 22. E. H. Sargent & Co. (Chicago), tech. dir, 30-.

SHERWIN, Carl (Paxson), *Physiological chemistry*. Bristol, Ind, 5/21/85; m. 11, c. 2. B.S, Hanover Col, 09; M.A, Indiana, 10; M.S, Illinois, 13; Sc.D, Tubingen, 15; M.D, Fordham, 20; Dr.P.H, N. Y. U, 23. Fordham, prof, 15-33.

SHERWOOD, D(onnelle) W(ayne), *Chemistry*. Connersville, Ind, 4/14/17; m. 41, c. 1. B.S, Purdue, 39; Ph.D, California, 42. Arizona, asst. prof, 49-.

SHERWOOD, G(eorge) Ray, *Chemistry*. Salem, Ind, 7/17/96; m. 23, c. 1. A.B, Indiana, 22; M.A, 25, Ph.D, 29. Col. City Detroit, instr, 29-33; Wayne, 33-, assoc. prof, 41-.

SHERWOOD, Noble P(ierce), *Bacteriology*. Greenfield, Ind, 3/24/82; m. 10, c. 3. B.S, Kansas, 05, A.M, 11, Ph.D, 21; B.M, Minnesota, 23, M.D, 24. Kansas, 11-, prof, 18-.

SHERWOOD, Thomas C(ecil), *Medicine, Anesthesiology*. Jay Co, Ind, 7/26/02; m. 39, c. 3. A.B, Kentucky, 28; M.A, Wisconsin, 29, Ph.D, 36, M.D, 42. Kentucky, 30-40, assoc. prof. 38-40.

SHIAU, Y(en) G(uang), *Chemistry*. Foochow, China, 8/4/20; m. 45. B.A, Pomona Col, 42; Ph.D, Chicago, 46. Standard Oil Co. Ind, 47-.

SHICK, Philip E(dwin), *Physical chemistry*. Kendallville, Ind, 1/7/18; m. 48. S.B, Harvard, 39, M.S, 41, Ph.D, 43. Mead Johnson & Co, res. super, 48-.

SHIDELER, Robert Weaver, *Biochemistry*. Joliet, Ill, 4/25/13. A.B, Goshen Col, 34; M.S, Chicago, 41. Ind. high schs, 36-40; Hendrix Col, assoc. prof, 46-.

SHIELDS, S(tanley) E(dward), *Chemical engineering*. 1/24/15. B.S, Syracuse, 35, M.S, 36. Standard Oil Co. Ind, proj. eng, 41-.

SHILLING, C(harles) W(esley), *Medicine*. Upland, Ind, 9/21/01; m. 26, c. 2. B.S, Taylor, 23; B.A, Michigan, 23, M.D, 27. U. S. Navy, 27-, Off. Naval Res, dir. med. sci. div, 47-.

SHILTS, Walter L(eonard), *Physics*. Columbia City, Ind, 11/6/02; m. 24, c. 6. C.E, Notre Dame, 22, M.S, 24. Notre Dame, 22-, assoc. prof, 28-34, prof. civil eng, 34-.

SHIMP, H(ans) George, *Chemistry*. Gera, Germany, 9/17/13, nat, 33; m. 47. B.S, Purdue, 37. Houdry Process Corp, 43-.

SHINN, F(rederick) L(afayette), *Chemistry*. Montpelier, Ind, 4/17/76. A.B, Indiana, 01, A.M, 02; Ph.D, Wisconsin, 06. Wisconsin, instr, 03-05; Oregon, 07-41, prof, 10-41.

SHINN, Martha (Anne) B(ridges), *Physiology*. Plainfield, Ind, 5/12/14; m. 38. A.B, DePauw, 35; M.S, Pittsburgh, 38; Ph.D, 42. Navy Dept. (Wash, D. C), 42-

SHIPLEY, Robert Everett, *Medicine*. Dayton, O, 7/24/12; m. 38, c. 2. B.S, Otterbein Col, 34; M.D, Western Reserve, 38. Lilly lab. clin. res, 45-.

SHIRLEY, Hardy L(omax), *Forestry*. Orleans, Ind, 11/20/00; m. 30, c. 3. B.A, Indiana, 22; Ph.D, Yale, 28. U. S. Forest Serv, 29-45, forest exp. sta, dir, 39-45; N. Y. State Col. Forestry (Syracuse), asst. dean, 45-.

SHIRLEY, Mary (Margaret), *Psychology*. Orleans, Ind, 2/7/99, died, 46. A.B, Indiana, 22; A.M, Minnesota, 25, Ph.D, 27. Ind. high schs, 18-20; Minnesota, 26-32; asst. prof, 29-32; Indiana, asst. prof, 43-46.

SHIRLEY, S(amuel) C(rawford), *Chemistry*. Orleans, Ind, 4/26/02. A.B, A.M, Indiana, 24. Am. Can Co, res. chem, 27-.

SHIVELY, Charles S(tacy), *Mathematics*. Peru, Ind, 5/25/75; m. 04, c. 2. A.B, McPherson Col, 07; A.M, Denver, 10, Ph.D, 19. Juniata Col, prof, 20-43.

SHIVELY, L(evi) S(tephen), *Mathematics*. Cerro Gordo, Ill, 10/10/84. A.B, Michigan, 08; A.M, Chicago, 16, Ph.D, 17. Ball State Col, assoc. prof, 28-41, prof, 41-.

SHOCK, N(athan) W(etherill), *Physiology, Psychology*. Lafayette, Ind, 12/25/06; m. 28, c. 2. B.S, Purdue, 26, M.S, 27; Ph.D, Chicago, 30. U. S. Pub. Health Serv, ch. gerontol, 41-.

SHOEMAKER, Bernard H(arvey), *Chemistry*. Jamestown, Mich, 11/30/04; m. 30, c. 3. A.B, Hope Col, 26; M.Sc, Ohio State, 38, Ph.D, 30. Standard Oil Co. Ind, 30-, asst. dir. res, 46-.

SHOEMAKER, Clarence Jay, *Organic chemistry*. Zeeland, Mich, 7/15/16; m. 42, c. 2. A.B, Hope Col, 38; Ph.D, Indiana, 42. A. B. Dick Co. (Chicago), res. chem, 42-.

SHOEMAKER, D(aniel) N(aylor), *Horticulture*. Fair Haven, O, 11/16/69, died, 44. B.S, Earlham Col, 94; Ph.D, Hopkins, 03. U. S. Dept. Agr, 04-34, horticult, 10-34.

SHOEMAKER, H(arold) A(dam), *Pharmacology*. New Ringgold, Pa, 3/11/96; m. 24, c. 2. Ph.G, Ph.C, B.S, Valparaiso, 20; M.S, Washington (Seattle), 24; Ph.D, Yale, 31. Oklahoma, 20-47, prof, 35-, asst. dean sch. med, 39-47.

SHOEMAKER, Hurst H(ugh), *Animal ecology, Ichthyology*. Frankton, Ind, 5/5/07; m. 36, c. 2. A.B, Earlham Col, 31; Ph.D, Chicago, 38. Earlham Col, instr, 31-35; Indiana, exten, 36-38; Illinois, asst. prof, 46-.

SHONLE, Horace A(bbot), *Chemistry*. Tuscola, Ill, 5/14/92, died, 47. B.S, Illinois, 16, M.S, 17. Eli Lilly & Co, 19-47.

SHOOK, G(lenn) A(lfred), *Physics*. Osgood, Ind, 7/16/82; m. A.B, Wisconsin, 07; Ph.D, Illinois, 14. Purdue, instr, 07-11; Wheaton Col, (Mass.), prof, 18-48.

SHORTRIDGE, Robert W(illiam), *Organic chemistry*. Newport News, Va, 9/1/18; m. 47. A.B, Wabash Col, 38; Ph.D, Ohio State, 43. Midwest Res. Inst, 45-.

SHOWALTER, A(mos) M(artin), *Biology, Cytology, Genetics.* Harrisonburg, Va, 12/15/91; m. 32, c. 1. B.A, Goshen Col, 18; M.A, Wisconsin, 20, Ph.D, 22. Madison Col, prof, 34-.

SHOWALTER, Merle F(ranklin), *Agricultural chemistry.* Middletown, Ind, 9/17/92; m. 19, c. 3. A.B, Indiana, 18; M.S, Purdue, 21. N. C. State Col, assoc. prof, 29-.

SHOWALTER, Robert K(enneth), *Horticulture.* Middlebury, Ind, 2/17/16; m. 43, c. 1. A.B, DePauw, 38; M.S, Purdue, 40. Florida, assoc. prof, 45-.

SHREVE, Darrell R(hea), *Algebraic geometry.* Sulphur, Okla, 2/20/08; m. 31, c. 3. B.A, Tulsa, 29; M.S, Okla. A. & M. Col, 31; Ph.D, Illinois, 38. Purdue, instr, 38-42; Carter Oil Co, res. 48-.

SHREVE, R(andolph) Norris, *Chemical engineering.* St. Louis, Mo, 3/9/85; m. 35. A.B, Harvard, 07. Purdue, prof, 30-.

SHREWSBURY, C(harles) L(eslie), *Animal nutrition.* Livonia, Ind, 10/19/98; m. 24, c. 1. A.B, Wm. Jewell Col, 23; Ph.D, Missouri, 28. Purdue, exp. sta, 29-45, assoc. prof, 32-45; Midwest Res. Inst, chm, 45-49.

SHRIGLEY, Edward W(hite), *Medicine.* Lansdowne, Pa, 2/20/08; m. 32, c. 4. B.S, Iowa State Col, 32, M.S, 33; M.A, Harvard, 34; Ph.D, Wisconsin, 37, M.D, 41. Indiana, assoc. prof. microbiol, 49-.

SHRINER, Ralph L(loyd), *Chemistry.* (starred). St. Louis, Mo, 10/9/99; m, c. 1. B.S, Washington (St. Louis), 21; M.S, Illinois, 23, Ph.D, 25. Indiana, chm. dept, 41-46; Iowa, prof, 47-.

SHROCK, Robert R(akes), *Geology.* Wawpecong, Ind, 8/27/04; m. 33, c. 1. A.B, Indiana, 25, A.M, 26, Ph.D, 28. Wisconsin, 29-37, asst. prof, 31-37; Mass. Inst. Tech, asst. prof. to prof, 37-. Indiana stratigraphy.

SHROYER, John H(enry), *Organic chemistry.* Cambridge City, Ind, 12/12/03. A.B, Alma Col, 25; M.S, Chicago, 28, Ph.D, 32. Bradley, prof, 40-.

SHULL, Gilbert M(alcolm), *Biochemistry.* Auburn, Ind, 6/10/18; m. 44. B.S, Indiana, 40; M.S, Wisconsin, 42, Ph.D, 48. Charles Pfizer & Co, res, 42-.

SHULTZ, Irvin Tabor, *Psychology.* Newburg, Ore, 2/25/92; m. 37, c. 2. A.B, Earlham Col, 18; M.A, Columbia, 22; Ph.D, Pennsylvania, 28. Ind. high schs, 18-24; Butler, assoc. prof, 24-40; Baylor, 46-, prof, 49-.

SHUMACKER, Harris B., Jr, *Surgery.* Laurel, Miss, 5/20/08; m. 33, c. 1. B.S, Chattanooga, 27; M.A, Vanderbilt, 28; M.D, Hopkins, 32. Indiana, chm. dept, 48-.

SHUMAN, John R(andall), *Plant breeding.* Montgomery, Pa, 6/6/10. B.S, Pa. State Col, 34; Ph.M, Wisconsin, 37, Ph.D, 38. Purdue, instr, 39-41; Merck & Co, plant genet, 42-.

SHUTE, E(mmett) R(ay), *Electrical engineering.* Coal City, Ind, 5/26/89. B.S, Purdue, 12. West. Union Tel. Co, 12-, v.p, 38-.

SIBBITT, W(ilmer) L(awrence), *Mechanical engineering.* Greencastle, Ind, 6/6/14; m. 47. B.S, Purdue, 37, M.S, 41, Ph.D, 42. Purdue, 43-, assoc. prof, 48-.

SIEBENTHAL, C(laude) E(llsworth), *Geology.* Vevay, Ind, 4/16/69, died, 30. A.B, Stanford, 92, A.M, 93. Chicago, 97-99, 00-01. Ind. Geol. Surv, 96-99; U. S. Geol. Surv, 01-30.

SIEGRIST, Urgan J., *Bacteriology.* Macedon, O, 10/18/08. M.S, Catholic, 36. St. Jospeh's Col. (Ind.), 36-40, res. sta, 46-.

SIELING, Dale Harold, *Soil chemistry.* McCracken, Kans, 6/7/09; m. 33, c. 2. B.S, Kans. State Col, 31, M.S, 32; Ph.D, Iowa State Col, 36. Purdue, 37-40, asst. prof, 38-40; Massachusetts, res. prof, 47-.

SIGERFOOS, Charles Crayton, *Mechanical engineering.* Elkhart, Ind, 1/10/08; m. 30, c. 2. B.S, Purdue, 30, M.S, 35. Purdue, 30-33; Mich. State Col, instr. to prof, 35-.

SILVEY, O(scar) W(illiam), *Physics.* Fishers, Ind, 4/3/80; m. 08, c. 3. B.A, Indiana, 07, M.A, 10; Ph.D, Chicago, 15. Purdue, 08-16, asst. prof, 15-16; A. & M. Col. (Tex.), prof, 16-.

SIMMONS, Eric L(eslie), *Biology.* Trujillo City, Dominican Republic, 2/11/17, nat, 31; m. 43, c. 2. A.B, Swarthmore Col, 38; Ph.D, Indiana, 44. Chicago, 46-, asst. prof, 49-.

SIMMONS, Orien W(illiam), *Metallurgy.* Ilion, N. Y, 2/10/11. B.S, Michigan, 35. Rose Poly. Inst, instr, 40-42; Battelle Mem. Inst, res, 42-.

SIMONDS, James Persons, *Pathology.* Cleburne, Tex, 3/19/78; m. 09. A.B, Baylor, 01; M.D, Rush, 07; Ph.D, Chicago, 23; D.P.H, Harvard, 14 State Bd. Health, Ind, 08-12; Northwestern, 14-43, prof, 23-43.

SIMS, M(arion) Wilson, *Electrical engineering.* Denton, Tex, 4/10/16; m, c. 3. A.B, B.S, A. & M. Col. (Tex.), 38. Gen. Elec. (Ft. Wayne), 39-.

SINK, R(ussell) S(eely), *Mechanical engineering.* Newton, Ind, 12/19/95. B.S, Purdue, 18, M.E, 25. Purdue, instr, 24-26; Remington Arms Co, sr. eng, 41-.

SINNETT, Carl E(arl), *Chemical engineering.* Wilkinsburg, Pa, 8/26/22; m. 48. B.S, Carnegie Inst. Tech, 46, M.S, 47. Standard Oil Co. Ind, 47-.

SIPPLE, Horace L(awson), *Nutrition, Foods.* Indianapolis, Ind, 10/14/05; m. 36. B.S, Pittsburgh, 26, Ph.D, 30. Am. Can. Co. (N. Y.), res, 33-45; Evap. Milk Assn, dir. res, 45-.

SISKIND, Robert R(eer), *Electrical engineering.* Boston, Mass, 6/10/02; m. 34, c. 1. B.S.E.E, Mass. Inst. Tech, 24; M.S.E.E, Harvard, 25. Purdue, 38-, prof, 41-.

SKEETERS, Maxwell James, *Chemistry.* Marshall, Ind, 4/1/02; m. 24. B.S, Rose Poly. Inst, 24; Ph.D, Purdue, 38. Diamond Alkali Co, leader res, 43-.

SKELTON, Russell R., *Civil engineering.* Princeton, Ind, 9/23/96. B.S, Purdue, 23, C.E, 34; M.S, Harvard, 39. New Hampshire, 28-, prof, 46-.

SKINNER, Burrhus Frederic, *Psychology* (starred). Susquehanna, Pa, 3/20/04; m. 36, c. 2. A.B, Hamilton Col, 26; M.A, Harvard, 30, Ph.D, 31. Minnesota, 36-45; Indiana, prof, 45-48; Harvard, prof, 48-. Natl. Acad. Sci. Author: *Walden Two.*

SKINNER, Charles Henry, *Physics, Mathematics.* Tipton, Co, Ind, 4/9/89; m. 15, c. 2. A.B, Indiana, 13, Ph.D, 25; M.S, Iowa, 16. DePauw, 13-15; Indiana, act. prof, 43-46; Purdue, prof, 46-.

SKINNER, John Harrison, *Animal husbandry.* Romney, Ind, 3/10/74, died, 42. B.S.A, Purdue, 97. Purdue, 02-42, prof. and dean sch. agr, 07-42.

SLANINA, Stephen Joseph, *Chemistry.* Mt. Pleasant, Pa, 12/23/04. B.S, Tri-State Col, 29; M.S, Notre Dame, 35, Ph.D, 37. Tri-State Col, 27-, prof, 37-.

SLATE, Floyd O(wen), *Analytical chemistry.* Carroll Co, Ind, 7/26/20; m. 39, c. 2. B.S, Purdue, 41, M.S, 42, Ph.D, 44. Purdue, 41-49, asst. prof, 46-49; Cornell, assoc. prof, 49-.

SLATON, Clifton J., *Chemical engineering.* Eustis, Fla, 10/16/13; m. 41, c. 2. B.S, Louisville, 34. Colgate-Palmolive-Peet Co. (Ind.), 36-.

SLAVIN, Arthur D(aniel), *Horticulture, Botany.* Rochester, N. Y, 8/18/03. B.S, M.S, Notre Dame. U. S. Dept. Agr, Soil Conserv. Serv, sr. hort, 34-.

SLEGEL, Louis, *Mechanical engineering.* Wabash, Ind, 3/29/05; m. 35, c. 2. B.S, Purdue, 31, M.S, 32, Ph.D, 45. Purdue, instr, 40-45; Ore. State Col, res. prof, 45-.

SLEIGHT, Virgil G(eorge), *Geology.* Chicago, Ill, 1/31/03; m. 31, c. 2. B.Sc, Northwestern, 25, Ph.D, 33; M.Sc, Brown, 27. DePauw, instr, 33-34; Ball State Col, 34-35; Arkansas, 37-46, asst. prof, 38-46; Miami (Fla.), prof, 46-.

SLESSER, Charles, *Chemical engineering.* Lafayette, Ind, 11/10/15; m. 40, c. 3. B.S, Purdue, 37, M.S.E, 40, Ph.D, 44. Atomic Energy Comn, ch. tech, 46-.

SLIPHER, E(arl) C(arl), *Astronomy* (starred). Mulberry, Ind, 3/25/83. A.B, Indiana, 06, A.M, 08. Lowell Observ, 06-, astron, 08-.

SLIPHER, V(esto) M(elvin), *Astronomy* (starred). Mulberry, Ind, 11/11/75. A.B, Indiana, 01, A.M, 03, Ph.D, 09, hon. LL.D, 29. Lowell Observ, 01-, dir, 26-. Henry Draper, Royal Astron. Soc, and Bruce Gold Medals, 32, 33, and 35. Natl. Acad. Sci.

SLONAKER, J(ames) Rollin, *Zoology, Physiology.* Farmland, Ind, 6/17/66; m. 97, c. 3. B.S, Wisconsin, 93; Ph.D, Clark, 96. Indiana, asst. prof, 96-01; Stanford, 03-31, assoc. prof, 25-30, prof, 30-31.

SMADEL, Joseph E(dwin), *Pathology, Bacteriology.* Vincennes, Ind, 1/10/07; m. 36. A.B, Pennsylvania, 28; M.D, Washington (St. Louis), 31. U. S. Army med. dept. res. and grad. sch, sci. dir, 46-.

SMALLEY, H(arold) R(yland), *Soils.* Madison Co, Ind, 5/30/87, died, 45. B.S, Purdue, 11, M.S, 13. Natl. Fertilizer Assn, 20-45, dir, 25-45.

SMELSER, George K., *Anatomy.* Anderson, Ind, 12/14/08; m. 32, c. 1. A.B, Earlham Col, 29; Ph.D, Chicago, 32. Columbia, 34-, assoc. prof, 46-.

SMITH, Albert Charles, *Pharmacy, Pharmaceutical chemistry.* Monroeville, O, 11/10/06; m. 32, c. 1. B.S, Ohio State, 29; M.S, Purdue, 31, Ph.D, 42. Wells-Yeager-Best Co. (Ind.), 35-36; Ohio North, prof, 44-.

SMITH, Alexander, *Chemistry* (starred). Edinburgh, Scotland, 9/11/65, died, 22. B.S, Edinburgh, 86; Ph.D, Munich, 89. Wabash Col, prof, 90-94; Chicago, 94-11, prof, 04-11; Columbia, prof, 11-21.

SMITH, Allen S(tratton), *Chemical engineering.* Ogilsby, Ill, 2/10/06; m. 28, c. 2. B.S, Minnesota, 26, Ch.E, 35; M.S, Louisville, 31; Ph.D, Michigan, 40. Notre Dame, prof, 46-.

SMITH, Arthur Bessey, *Physics.* Altoona, Ia, 8/10/75; m. 01, c. 2. B.Sc, Nebraska, 01; E.E, Purdue, 07; Ph.D, Northwestern, 26. Purdue, asst. prof. telephone eng, 05-09; Assocd. Elec. Labs, Inc, 31-43, v p, 34-43; Automatic Elec. Labs, Inc, 43-, v. p, 48-.

SMITH, Aubrey H(enderson), *Mathematics.* Westchester, N. S, Can, 10/3/05, nat, 37; m. 30. B.Sc, Mt. Allison, 25; M.Sc, Brown, 28, Ph.D, 32. Purdue, 35-, assoc. prof, 46-.

SMITH, B(enjamin) H(arrison), *Botany.* Crawfordsville, Ind, 4/1/92. A.B, Wabash Col, 17; M.S, Geo. Washington, 21; Ph.D, Ohio State, 31. Ind. State Teachers Col, assoc. prof. to prof, 21-.

SMITH, Burke, *Astronomy, Mathematics, Engineering.* Forrest, Ill, 3/26/78. B. S, Washington (Seattle), 99; Ph.D, Yale, 04. Purdue, instr, 04-07; Ill. Bell Tel. Co, 14-43; Chicago, Yerkes Observ, 43-.

SMITH, Carl C(linton), *Biological chemistry.* Lima, O, 7/12/14. A.B, DePauw, 36; M.S, Cincinnati, 37, Ph.D, 40. Cincinnati, 40-, instr, 42-.

SMITH, Charles Decker, *Chemical engineering.* Evansville, Ind, 3/14/15; m. 39, c. 3. B.S, Purdue, 37, M.S, 40. Monsanto Chem. Co, 39-, asst. supt, 48-.

SMITH, C(harles) M(arquis), *Physics.* Racine, Wis, 9/28/72, died, 26. B.S, Wisconsin, 96. Purdue, 01-26, asst. prof, 03-26. Ind. Acad. Sci. (v.p, 24).

SMITH, Charles Piper, *Botany.* St. Catharines, Ont, Can, 4/25/77. B.S, Purdue, 03; A.M, Stanford, 08, Ph.D, 27. Maryland, assoc. prof, 12-14; teacher, San Jose (Calif.) high schs, 20-42.

SMITH, Ernest Rice, *Geology, Paleontology.* Cameron, Mo, 7/3/91; m. 18, c. 2. A.B, Oberlin Col, 12, A.M, 19. DePauw, asst. prof. to prof, 21-47.

SMITH, Franklin C(hapin), *Mathematics.* Lebanon, Ind, 9/29/09; m. 36, c. 3. A. B, Michigan, 31, A.M, 32, Ph.D, 34. Lincoln Natl. Life Ins. Co, actuary, 43-47; Indiana, exten. lect, 44-47.

SMITH, George Harvey, *Physics.* Dillsboro, Ind, 4/23/98; m. 31, c. 3. A.B, Indiana, 21; B.S, Mass. Inst. Tech, 24. Linde Air Prods. Co. (Ind.), flame res, 27-.

SMITH, G(eorge) H(ume), *Botany.* Indianapolis, Ind, 3/1/96, died, 44. A.B, Wabash Col, 18, A.M, 19; Ph.D, Cornell, 23. *Biol. Abstracts,* 29-44.

SMITH, Glenn M(arsh), *Plant breeding.* Muscatine, Ia, 1/9/92; m. 17, 47, c. 1. B.S, Iowa State Col, 16; M.S, Purdue, 20. Purdue, 17-, exp. sta. 19-, asst. agron, 38-43, agron, 47-.

SMITH, Homer W(illiam), *Physiology* (starred). Denver, Colo, 1/2/95; m. 21. B.A, Denver, 17; Sc.D, Hopkins, 21. Eli Lilly & Co. (Ind.), res. chem, 21-23; N. Y. U, dir. physiol. lab, 28-. Natl. Acad. Sci.

SMITH, Huron H(erbert), *Botany.* Danville, Ind, 7/26/83, died, 33. B.S, DePauw, 05. Field Museum Nat. Hist, dendrol, 07-17; Pub. Museum (Milwaukee), curator, 17-33.

SMITH, Jay A(lfred), *Physiology.* Vincennes, Ind, 9/21/13; m. 32, c. 2. A.B, DePauw, 36; M.A, Hopkins, 38, Ph.D, 39. Chicago, 40-, asst. prof, 43-.

SMITH, John E(arl), *Physics.* Lawrenceburg, Ind, 11/19/84; m. 20, c. 3. A.B, Indiana, 12, Ph.D, 24; A.M, Wisconsin, 15. Ind. high. schs, 14-15; Franklin Col, prof, 19-30; N. Mex. Mil. Inst, 30-.

SMITH, John Treanor, *Chemistry.* Indiana Harbor, Ind, 2/22/20; m. 43, c. 2. B.S, Rice Inst, 40; Ph.D, Michigan, 43. Rice, asst. prof, 46-.

SMITH, J(oseph M(auk), *Chemical engineering.* Sterling, Colo, 2/14/16; m. 43, c. 1. B.S, Calif. Inst. Tech, 37; Sc. D, Mass. Inst. Tech, 43. Purdue, assoc. prof, 45-.

SMITH, K(eith) K(uenzi), *Physics.* Spencerville, Ind, 10/10/87, died, 35. A.B, Northwestern, 10; Ph.D, Princeton, 15. Northwestern, asst. prof, 15-35.

SMITH, Kenneth Acton, *Chemical engineering.* La Crosse, Wis, 12/30/21; m. 48. B.S, Wisconsin, 44, M.S, 47, Ph.D, 49. Sinclair Ref. Co. (Ind,), 43-.

SMITH, Knowles (Burdette), *Geology, Mining engineering.* South Bend, Ind, 9/30/78; m. 03, c. 2. B.S, Mich. Col. Mines, 91, E.M, 01; Ph.D, Notre Dame, 17. Notre Dame, 08-46, dean mining eng, 08-43; prof. geol, 43-46; conserv. comr, Ind, 29-33.

SMITH, Lee Irvin, *Organic chemistry* (starred). Indianapolis, Ind, 7/22/91. A.B, Ohio State, 13, A.M, 15; A.M, Harvard, 17, Ph.D, 20. Minnesota, 20-, prof, 32-. Natl. Acad. Sci.

SMITH, Lee T(homas), *Chemistry.* Burlington, Ind, 2/20/96. A.B, Indiana, 18, A.M, 23, Ph.D, 25. Indiana, instr, 22-25; Hercules Powder Co, 25-.

SMITH, Lemuel Fish, *Chemistry.* Harrodsburg, Ky, 2/9/73; m. 02, 38, c. 2. A.B, Wm. Jewell Col, 97; M.S, Chicago, 11. Teacher, Ind. acad, 02-08; Kalamazoo Col, prof, 11-44.

SMITH, Lester A(lvin), *Radiology.* Portis, Kans, 5/17/90; m. 18. A.B, Kansas, 13, M.A, 14; M.D, Rush, 16. Indiana, 21-, Indianapolis Gen Hosp, ch. radiol, 46-.

SMITH, Orrin Harold, *Physics.* Iveyville, Ia, 9/1/84; m. 11, c. 2. A.B, Knox Col, 08; A.M, Illinois, 09, Ph.D, 14. DePauw, prof, 25-.

SMITH, Raymond C(lifford), *Physics.* Indianapolis, Ind, 4/29/09; m. 36, c. 1. B.S, Texas Christian, 27, M.S, 29; Ph.D, Texas, 41. Carbide & Carbon Chems. Corp, 45-.

SMITH, R(eading) Barlow, *Chemistry.* Rome, Ga, 3/23/04. N. Y. U; B.S, Bucknell, 27. Sinclair Ref. Co. (East Chicago, Ind.), exp. eng, 29-.

SMITH, Richard H(arbert), *Aeronautics.* Dillsboro, Ind, 1/15/94. B.S, Moores Hill Col, 15; A.M, Hopkins, 28, Ph.D, 29. U. S. Navy Dept. (Wash, D. C.), 18-29; Mass. Inst. Tech, 29-, prof, 31-.

SMITH, R(obert) O(tto), *Fisheries.* Peru, Ind, 7/1/03; m. 33. A.B, DePauw, 25. U. S. Bur. Fisheries, 25-45; U. S. Fish & Wildlife Serv, aquatic biol, 49-.

SMITH, Ronald N(eville), *Physics.* Vancouver, B.C, Can, 6/6/11, nat, 45; m. 39, c. 2. B.A, British Columbia, 31, M.A, 33; Ph.D, Purdue, 41. Purdue, 41-46, asst. prof, 44-46; Boeing Airplane Co, res. eng, 46-.

SMITH, Ruby Green, *Biology, Sociology.* Rush Co, Ind, 1/6/78; m. 05, c. 3. A.B, Stanford, 02, A.M, 04; Ph.D, Cornell, 14. Cornell, N. Y. State exten. serv, prof. home econ, 19-46.

SMITH, Russell P(aul), *Physics.* Kendallville, Ind, 11/23/97; m. 22, c. 3. A.B, Indiana, 20; A.M, Pennsylvania, 30. Grove City Col, 39-, prof, 42-.

SMITH, Scott W(infield), *Physics.* Boone, Ia, 6/17/97. A.B, Coe Col, 22, M.S, 24; Ph.D, Pittsburgh, 31. Kelley-Koett Mfg. Co, mgr. Ind. Terr, 37-42; Indiana, instr. radiol, 41-.

SMITH, T(homas) M(arshall), *Chemistry.* Cynthiana, Ky, 10/4/83, died, 45. B.S, Kentucky, 04, M.S, 05; Ph.D, N. Y. U, 21. Vincennes, 05-10; N. Y. U, prof, 16-45.

SMITH, T(odd) O(rin), *Chemistry.* Carrollton, O, 10/27/85. A.B, Indiana, 10; M.S, New Hampshire, 16. New Hampshire, exp. sta, 10-, assoc. chem, 17-.

SMITH, Victor James, *Industrial education.* Richmond, Ind, 11/10/90; m. 14, c. 4. Ph.B, Chicago, 23; M.A, Columbia, 29. Sul Ross State Teachers Col, prof, 20-.

SMITH, Walter T(homas), Jr, *Organic chemistry.* Havana, Ill, 2/28/22; m. 45. B.S, Illinois, 43; Ph.D, Indiana, 46. Iowa, 47-, asst. prof, 49-.

SMITH, W(illiam) W(esley), *Animal husbandry.* Nevada, Ia, 12/13/80; m. 11, c. 2. B.S, Iowa State Col, 03, M.S, 06, M.Agr, 20. Purdue, 05-, prof, 25-,

SMITHBURN, Kenneth C., *Medicine.* Noblesville, Ind, 10/19/04; m. 28. Rockefeller Inst, 30-38; Rockefeller Found, int. health div, 38-.

SMITHSON, Frederick C(harles) M(axted), *Chemistry.* London, Eng, 10/19/93, died, 46. A.B, Ill. Wesleyan, 14, M.S, 16; Ph.D, Chicago, 30. Wabash Col, 25-34, assoc. prof, 30-34; N. Mex. Sch. Mines, prof, 34-46.

SMITHSON, John R(oyston), *Physics.* Norrisville, Md, 9/11/12; m. 37, c. 1. B.S, Washington Col. (Md.), 34; M.S, Indiana, 40. Ball State Teachers Col, 40-47; U. S. Naval Acad, asst. prof, 47-.

SNADER, D(avid) L., *Engineering.* Westminster, Md, 7/8/88; m. 19. Arch.E, Ohio Northern, 13, C.E, 14, M.S, 18; M.A, Columbia, 26, Ph.D, 37. Valparaiso, prof, 14-17; S. Dak. State Col, prof, 19-24; Stevens Inst. Tech, prof, 24-44; Norwich, prof, 46-.

SNEDECOR, James G(eorge), *Physiology.* Ames, Ia, 6/9/17; m. 44, c. 2. B.S, Iowa State Col, 39; Ph.D, Indiana, 47. Massachusetts, asst. prof, 48-.

SNIDER, L(uther) C(rocker), *Geology.* Mt. Summit, Ind, 9/13/82, died, 47. A.B, Indiana, 08, A.M, 09; Ph.D, Chicago, 15. Okla. Geol. Surv, asst. dir, 09-15; Henry L. Doherty & Co, geol, 25-35; Texas, prof, 41-47. Assn. Petrol. Geol. (pres, 41).

SNODDY, George S(amuel), *Psychology.* Emporia, Kans, 4/21/82, died, 47. A.B, B.S, Kansas, 12, A.M, 13; Ph.D, Clark, 15. Indiana, prof, 25-40.

SNOW, Charles C(hapman), *Organic chemistry.* Irvington, Va, 1/31/90; m. 22, c. 3. B.S, Col. William and Mary, 12; M.S, Columbia, 15; Ph.D, Indiana, 32. Oakland City Col, prof, 26-37; Doane Col, prof, 42-.

SNOW, Harold R(obert), *Chemistry.* Warner, Ill, 10/2/95; m. 18, c. 3. B.S, Michigan, 19, M.S, 20, Ph.D, 22. Standard Oil Co. Ind, 25-42; Pan Am. Ref. Corp, 42-.

SNYDER, Fred H(ugh), *Biochemistry.* Connersville, Ind, 3/20/13; m. 38, c. 2. A.B, DePauw, 33; A.M, Illinois, 34; Ph.D, Purdue, 37. Procter & Gamble, 40-.

SNYDER, J(ohn) O(tterbein), *Zoology.* Butler, Ind, 8/14/67, died, 43. A.B, Stanford, 97, A.M, 99. Stanford, 99-32, assoc. prof, 11-25, prof, 25-32.

SNYDER, W(erner) T(hadeus), *Agronomy.* Rockport, Ind, 8/9/93, died, 46. B.S.A, Purdue, 15, M.S.A, 28. Ind. high schs, 17-22, 36-46.

SOBATZKI, R(aymond) J(oseph), *Chemistry.* Chicago, Ill, 11/22/03; m. 35. B.S, Notre Dame, 25, M.S, 26; Ph.D, Northwestern, 30. Dupont Co, 28-35; Resinous Prods. & Chem. Co, 35-42; Rohm & Haas Co, 42-.

SODERBERG, (Karl) Gustaf, *Electrochemistry.* Helsingborg, Sweden, 9/15/04, nat; m. 31. Grad, Orebro Col. (Sweden), 22; Ch.E, Royal Tech. Col. (Sweden), 26. Dirigold Corp. (Ind.), 26-28.

SOLBERG, H(arry) L(eland), *Mechanical engineering.* Brookings, S. Dak, 3/30/98; m. 29, c. 2. B.S, S. Dak. State Col, 20; B.S.(M.E), Purdue, 21, M.S.(M.E), 23. Purdue, 21-, prof, 36-41, head sch. mech. eng, 41-.

SOLDNER, Weldon L., *Biochemistry.* Berne, Ind, 9/24/15; m. 43, c. 2. B.S, Purdue, 37. Cent. Soya Co, 37-, feed plant tech, 40-43, dir. biol. lab, 43-.

SOLLENBERGER, Paul, *Astronomy.* Kokomo, Ind, 8/14/91; m, c. 1. B.S, Marion Nor. Col, 13. U. S. Naval Observ, 14-, in chg. time serv, 19-, astron, 29-.

SOLOMON, Reuben, *Clinical medicine.* Indianapolis, Ind, 8/17/93; m. 27, c. 2. B.S, Indiana, 15, M.D, 17. Indiana, clin. prof, 42-.

SOMERVILLE, A(lbert) A(lexander), *Physics.* Milroy, Ind, 1/28/83. Ph.D, Cornell, 10. Vanderbilt Co, v. p, mgr. rubber dept.

SOMMER, Nolan B(en), *Chemistry.* Merna, Nebr, 6/27/19; m. 47. B.S, Nebraska, 41, M.S, 42; Ph.D, Indiana, 44. Jefferson Chem. Co, 47-.

SOMMERS, Armiger H(enry), *Chemistry.* Clarksdale, Miss, 6/15/20. B.S, Notre Dame, 42, M.S, 43, Ph.D, 48. Abbott Labs, 47-.

SONNEBORN, T(racy) M(orton), *Zoology* (starred). Baltimore, Md, 10/19/05; m. 29, c. 2. B.A, Hopkins, 25, Ph.D, 28. Indiana, 39-, prof, 43-. Prize, Am. Assn. Adv. Sci, 46; Natl. Acad. Sci; Soc. Nat. (pres, 49); Genetics Soc. (pres, 49).

SOPER, Quentin F(rancis), *Chemistry.* Buhl, Minn, 12/3/19; m. 46. B.Chem, Minnesota, 40; Ph.D, Illinois, 43. Eli Lilly & Co, 44-.

SORENSEN, Robert Louis, *Chemistry.* York, Nebr, 2/17/22; m. 46, c. 1. B.S, Nebraska, 43. Magnavox Co. (Ind.), res, 46-48; D. B. Lytle (Conn.), 48-.

SORG, L(eonard) V(etter), *Chemistry.* Hesston, Kans, 3/8/06. A.B, Kansas, 27; A.M, Kansas City, 40. Standard Oil Co. Ind, 30-.

SOUDER, Wilmer, *Physics, Chemistry.* Salem, Ind, 84; m. 08, c. 1. A.B, Indiana, 10, A.M, 11; Ph. D, Chicago, 16. U. S. Bur. Standards, 17-, prin. phys, 29-45, ch. div. metrol, 45-.

SOUSLEY, C(larence) P(iersall), *Mathematics.* Winchester, Ky, 8/5/89; m. 15, c. 3. A.B, A.M, Ky. Wesleyan Col, 09; Ph.D, Hopkins, 15. Rose Poly. Inst, head dept, 20-.

SOWA, Frank J(oseph), *Chemistry.* Woodburn, Ore, 8/3/06; m. 30, c. 4. B.Sc, Notre Dame, 30, M.Sc, 31, Ph.D, 33. Notre Dame, instr, 33-36; Bendix Aviation Corp. (Ind.), res, 36-38; Soya Labs, Inc, 38-.

SPANNUTH, Hiram T., *Chemistry.* Greenfield, Ind, 3/31/12; m. 39, c. 1. A.B, Indiana, 32, A.M, 35. Ind. high schs, 34-36; Wilson & Co, asst. dir. res, 36-; Indiana, 40-48; lect, 46-48.

SPARKS, Chiles E(mory), *Chemistry.* Sandy Hook, Ky, 10/10/09; m. 36, c. 2. A.B, Georgetown Col, 30; M.S, Florida, 31; Ph.D, Purdue, 36. Dupont Co, 36-.

SPARKS, Meredith P(leasant) (Mrs. Wm. J. Sparks), *Organic chemistry.* Palestine Ill, 12/9/05; m. 30, c. 4. A.B, Indiana, 27, A.M, 28; Ph.D, Illinois, 36. Dupont Co, 29-34; Am. Cyanamid Co, 41-46.

SPARKS, W(illiam) J(oseph), *Chemistry.* Wilkinson, Ind, 2/26/05; m. 30, c. 4. A.B, Indiana, 26, A.M, 29; Ph.D, Illinois, 36. Standard Oil Develop. Co, 36-, dir, 46-.

SPECK, John C., *Chemistry.* Indianapolis, Ind, 1/6/17; m. B.S, Illinois, 39; Ph.D, North Carolina, 43. Natl. Defense Res. Comm. (Ind.), 43-45; Mich. State Col, 46-, asst. prof, 48-.

SPEIDEL, Edna Warweg, *Physiological chemistry.* Indianapolis, Ind, 6/14/08. B.S, Butler, 29; A.M, Michigan, 30; Ph.D, Iowa, 35.

SPEIDEL, Thomas D., *Orthodontics.* Iowa City, Ia, 2/19/08; m. 34, c. 3. D.D.S, Iowa, 30, M.S, 32. Indiana, prof, 41-45; Loyola (La.), dean, 45-48; Minnesota, prof, 48-.

SPENCER, George Everett, *Agricultural engineering.* Royal Centre, Ind, 10/31/00; m. 28, c. 2. B.S, Purdue, 27, M.S, 35. Purdue, instr. to prof, 29-.

SPENCER, G(uilford) L(awson), *Chemistry.* Lafayette, Ind, 12/21/58, died, 25. B.S, A.C, Purdue, 79, Sc.D, 91; M.S, Michigan, 82. U. S. Dept. Agr, 83-01; Cuban-Am. Sugar Co, 06-25.

SPENCER, Ray(mond) C(hester), *Metallurgy.* Russellville, Ind, 6/27/02; m. 34, c. 2. B.S, Purdue, 25; M.S, Ph.D, Notre Dame, 28. Notre Dame, instr, 27-29; Bliss & Laughlin, metal, 34-.

SPENCER, W(arren) R(ussell), *Civil engineering.* Russellville, Ind, 8/15/89. A.B, Indiana, 12; B.S, Rose Poly. Inst, 16, C.E, 21; M.S, Iowa State Col, 26. Supt, Ind. schs, 12-14; Rose, instr, 16-18; Arkansas, prof, 19-.

SPERRY, Theodore M(elrose), *Botany.* Toronto, Ont, Can, 2/20/07, U. S. citizen; m. 35. B.S, Butler, 29; M.S, Illinois, 31, Ph.D, 33. Kans. State Teachers Col, asst. prof, 46-.

SPIETH, Alda May, *Botany.* Jeffersonville, Ind, 4/5/98. A.B, Huntingdon Col, 18; M.S, Chicago, 25, Ph.D, 31. Ala. State Teachers Col, prof, 30-.

SPIETH, Herman T(heodore), *Zoology.* Charlestown, Ind, 8/21/05; m. 31, c. 1. A.B, Ind. Cent. Col, 26; Ph.D, Indiana, 31. Indiana, 26-32, instr, 31-32; Col. City N. Y, 32-, asst. prof, 35-.

SPRAGUE, Austin D(ever), *Physics.* Portsmouth, O, 12/24/07; m. 36, c. 2. A.B, Miami (O.), 29; M.Sc, Ohio State, 31, Ph.D, 36. DePauw, assoc. prof, 46-.

SPRAGUE, Carlton S(tanley), *Electrical engineering.* Worcester, Mass, 10/16/01; m. 27, c. 2. B.S, Worcester Poly. Inst, 23; M.S, Purdue, 34, Ph.D, 43. Purdue, res. assoc, 26-.

SPRAGUE, James M(aurice), *Organic chemistry.* Trafalgar, Ind, 7/10/08; m. 29, c. 2. A.B, Franklin Col, 30; Ph.D, Wisconsin, 34. Sharp & Dohme, Inc, 37-, dir. res, 43-.

SPRANG, C(ornelius) Austin, *Organic chemistry.* Hardin Co, O, 2/29/12. B.S, Ohio Northern, 36; M.S, Purdue, 38, Ph.D, 41. Emery Industs, Inc, res. chem, 40-.

SPRAUER, J(erome) W(illiam), *Chemistry.* Huntingburg, Ind, 8/14/12; m. 41. B.S, Purdue, 34, M.S, 37; Ph.D, Pa. State Col, 41. Dupont Co, 46-.

SPRAUL, J(oseph) Robert, *Chemistry.* Lexington, Ky, 10/22/16; m. 42, c. 1. B.S, Indiana, 38, M.A, 39, Ph.D, 41. Indiana, instr, 41-42; Gen. Am. Transport. Corp. (East Chicago), res, 47-.

SPRAY, Robb S(palding), *Bacteriology, Hygiene.* Omaha, Nebr, 2/19/90; m. 2nd, 46, c. 1. B.S, Purdue, 14; M.S, Pa. State Col, 17; Ph.D, Chicago, 23. Purdue, path, 18-20; West Virginia, 21-46, prof, 26-46.

SPRINGER, G(eorge) P(errcy), *Civil engineering.* Whitehall, Mich, 9/14/83; m. 43. B.S, Mich. State Col, 11, C.E, 21. Maryland, assoc. prof, 13-18; State Hy. Dept, Mich, 21-24; Purdue, 27-, assoc. prof, 41-.

SPROWLS, J(esse) W(illiam), *Psychology.* Claysville, Pa, 8/17/87. B.S, Valparaiso, 10; A.B, B.S, Pittsburgh, 14; A.M, Clark, 18, Ph.D, 19. Maryland, prof, 27-.

STACK, J(oseph) W(illiam), *Zoology.* Jefferson, O, 2/2/93; m. 17, c. 2. B.S, Notre Dame, 15, M.S, 18. Mich. State Col, instr. to prof, 15-.

STAHL, C(orwin) F(loyd), *Entomology.* McCool, Ind, 9/26/89. B.S, Pomona Col, 11. U. S. Dept. Agr, 13-24; Trop. Plant Res. Found, Cuban Exp. Sta, 24-.

STAHLY, E(ldon) E(verett), *Organic chemistry.* Danvers, Ill, 2/13/08; m. 46. B.A, Bluffton Col, 29; M.A, Ohio State, 31; Ph.D, Pa. State Col, 34. Commercial Solvents Corp. (Terre Haute), dir. chem. res, 48-.

STAIR, Edw(ard) C(lement), *Horticulture.* Brook, Ind, 11/7/89; m. 43. B.S.A, Purdue, 14, M.S, 23. Ind. high. schs, 14-20; Purdue, 23-, assoc. prof, 36-.

STALEY, James McDonald, *Mathematics.* San Francisco, Calif, 10/16/06; m. 45, c. 2. B.S, Ind. State Teachers Col, 31, M.S, 37. Ind. high schs, 31-37; Colo. A. & M. Col, instr, 38-.

STALEY, Ronald W(illiam), *Synthetic resins and plastics.* Ft. Wayne, Ind, 9/14/15; m. 48, c. 3. B.S, Purdue, 37. Gen. Elec. 37-, group leader, 43-.

STALNAKER, John Marshall, *Psychology.* Duluth, Minn, 8/17/03; m. 33, c. 3. B.S, Chicago, 25, M.A, 28. Purdue, 26-31, asst. prof, 30-31; Princeton, res. assoc. to prof, 36-45; Stanford, prof, 45-49.

STANLEY, Alfred R(eeves), *Bacteriology.* Des Moines, Ia, 4/9/07; m. 32, c. 2. A.B, Penn Col, 30; M.S, West Virginia, 32, Ph.D, 35. Commercial Solvents Corp. (Terre Haute), res, 43-.

STANLEY, Oran B(ert), *Botany, Forestry.* Mooresville, Ind, 6/2/09; m. 32, c. 2. B.S, Butler, 31; Ph.D, Yale, 36. Colgate, 34-, assoc. prof, 46-.

STANLEY, Paul Elwood, *Physics.* Huntington, Ind, 11/6/09; m. 30, c. 2. A.B, Manchester Col, 30; M.S, Ohio State, 33, Ph.D, 37. Purdue, 45-, asst. prof. aeronaut, 45-48, assoc. prof, 48-.

STANLEY, W(endell) M(eredith), *Chemistry* (starred). Ridgeville, Ind, 8/16/04; m. 29, c. 4. B.E, Earlham Col, 26; M.S, Illinois, 27, Ph.D, 29; hon. Sc.D, Harvard 38, Yale 38, Princeton 47; LL.D, California, 46; hon. Dr, Paris, 47. Rockefeller Inst, 31-48, mem, 40-48; California, prof. biochem, 48-. Am. Assn. Adv. Sci, prize, 37; gold medal, Am. Inst. (N. Y.), 41; Nichols and Gibbs Medals, Am. Chem. Soc, 46-47; shared Nobel Prize in chem, 46; Franklin Medal, 48. Natl. Acad. Sci. Tobacco mosaic, influenza and other viruses.

STANLEY, William E(dward), *Sanitation.* Burrton, Kans, 8/14/91; m. 24, c. 2. B.S, Kans. State Col, 12; C.E, Purdue, 16. Purdue, instr, 13-17; Cornell, prof, 36-44; Mass. Inst. Tech, prof, 44-.

STANSBURY, Alan Painter, *Electrical engineering.* Indianapolis, Ind, 11/28/22; m. 46. B.S, Wake Forest Col, 43. Bur. Standards, radio eng, 46-.

STANSBURY, E(le) E(ugene), *Physical metallurgy.* Indianapolis, Ind, 12/14/18; m. B.Ch.E, N. C. State Col, 40; M.S, Cincinnati, 42, Ph.D, 46. Tennessee, 45-, assoc. prof, 47-.

STARBUCK, Edwin D(iller), *Psychology* (starred), *Philosophy*. Bridgeport, Ind, 2/20/66, died, 47. A.B, Indiana, 90; A.M, Harvard, 95; Ph.D, Clark, 97. Ind. high schs, 90-91; Vincennes, prof. math, 91-93; Stanford, asst. prof. educ, 97-04; Earlham Col, prof, 04-06; Iowa, 06-30; South. California, prof, 30-.

STARK, E(ric) W(alter), *Forestry*. Germany, 3/31/10, nat, 23; m. 36, c. 3. B.S, Purdue, 32; M.S, Syracuse, 34. Purdue, assoc. prof, 43-.

STARK, Orton K(irkwood), *Bacteriology*. Cromwell, Ind, 9/21/98; m. 26, c. 2. A.B, DePauw, 22; Ph.D, Illinois, 26. Miami (O.), 29-, prof, 43-.

STARKEY, Otis P(aul), *Economic geography*. Buffalo, N. Y, 4/14/06; m. 32. B.S, Columbia, 27, M.A, 30, Ph.D, 39. Pennsylvania, 31-42, asst. prof, 41-42; Indiana, prof, 46-.

STARR, John V(ertrees), *Industrial chemistry*. Winamac, Ind, 7/19/02; m. 29, c. 4. A.B, Wabash Col, 24; Ph.D, Cornell, 28. Esso Standard Oil Co, 40-.

STARRETT, Ruth C(olvin), *Plant pathology*. (See Mrs. Ruth S. McQuire).

STAUDER, Sister M. Francis (Borgia), *Mathematics*. Witt, Ill, 4/7/11. A.B, St. Louis, 37; M.S, Notre Dame, 43, Ph.D, 47. Mo. high schs, 37-45; Le Clerc Col, prof, 47-.

STAUFFER, J(acob) R(eiff) K(ob), *Mathematics*. Columbia, Pa, 11/10/02; m. 27, c. 4. A.B, Franklin and Marshall Col, 24; M.S, Chicago, 28. Purdue, instr, 27-30; R. I. State Col, 41-, assoc. prof, 47-.

STAYNER, R(ichard) Dale, *Organic chemistry*. Portland, Ore, 5/9/14; m. 39, c. 2. B.S, Ore. State Col, 39; M.A, Indiana, 45, Ph.D, 46. Eli Lilly & Co, 42-43; Calif. Res. Corp, 46-.

STEARN, Allen E(dwin), *Physical chemistry, Bacteriology*. Lafayette, Ind, 9/14/94; m. 20, c. 1. A.B, Stanford, 15, A.M, 16; M.S, Illinois, 17, Ph.D, 19. Missouri, 21-, prof, 37-.

STEARN, Noel H(usdon), *Geology*. Lafayette, Ind, 9/23/96. A.B, Stanford, 17, A.M, 18; Ph.D, Wisconsin, 26. W. C. McBride, Inc, ch. geol, 30-40, v.p, 40-.

STEARNS, Forest (Walden), *Plant ecology*. Milwaukee, Wis, 9/10/18; m. 43, c. 3. A.B, Harvard, 39; Ph.M, Wisconcin, 40, Ph.D, 47. Purdue, 47-, asst. prof, 49-.

STEDMAN, C(ecil) K(ingsley), *Physics*. Sussex, Eng, 9/4/08, nat, 39; m. 34, c. 2. B.A, British Columbia, 30; M.S, Purdue, 31, Ph.D, 36. Purdue, 35-43, assoc. prof, 41-43; Boeing Airplane Co, ch. phys. res, 43-.

STEEL, Robert A(nson), *Chemical engineering*. Boston, Mass, 5/19/14; m. 39, c. 1. B.S, Harvard, 35; M.S, Mass. Inst. Tech, 38. Standard Oil Co. Ind, 38-, group leader, 43-46, sect. leader, 46-.

STEELE, B(renton) L(orenzo), *Physics*. Walkerton, Ind, 12/14/75, died, 31. A.B, Indiana, 04, A.M, 10. Ind. high schs, 04-05, 08-09; Wash. State Col, 10-31, prof, 13-31, head dept, 19-31.

STEELE, F(rederick) A(bbott), *Physical chemistry*. Wabash Co, Ind, 12/4/99; m. 28, c. 3. B.S, Notre Dame, 23, M.S, 26; Ph.D, Pa. State Col, 28. Minn. Mining & Mfg. Co, ch. inorg. res, 40-.

STEELE, H(erd) C(leveland), *Chemistry*. Morton, Miss, 11/6/83. A.B, Harperville Col, 04; B.S, Miss. Col, 10; Ph.D, Indiana, 37. Miss. Col, 14-18; Miss. South. Col, prof, 40-.

STEEN, Edwin B(enzel), *Parasitology*. Wheeling, Ind, 7/23/01; m. 27, c. 2. A.B, Wabash Col, 23; A.M, Columbia, 26; Ph.D, Purdue, 38. Wabash Col, 23-27; Purdue, 31-37; West Mich. Col, assoc. prof, 41-.

STEER, Max David, *Speech pathology*. N. Y. C, 6/14/10; m. 42. B.S, Long Island, 32; M.A, Iowa, 33, Ph.D, 38. Purdue, 35-, prof, 46-, dir. clinic, 46-.

STEFANIAK, J(erome) J(oseph), *Bacteriology*. Two Rivers, Wis, 2/6/17; m. 46. B.S, Wisconsin, 42, M.S, 44, Ph.D, 47. Eli Lilly & Co, microbiol, 46-.

STEIK, Karl T(heodor), *Organic chemistry*. Lemsal, Latvia, 7/12/84. A.M, Harvard, 11; Ph.D, Chicago, 19. Standard Oil Co, Ind, res, 20-22.

STEINBACH, Leslie I(rving), *Physics*. Louisville, Ky, 12/11/08; m. 37, c. 2. A.B, Indiana, 29, A.M, 30, Ph.D, 33. Canterbury Col. (Ind.), head dept, 30-35; Gen. Implement Corp, head. res, 46-.

STEINER, L(oren) F(ranklin), *Entomology*. Bluffton, O, 7/26/04; m. 27, c. 1. B.S. (Agr.), Ohio State, 26, M.S, 27. Purdue, exp. sta, 27-30; U. S. Dept. Agr, in chg. fruit insect lab. (Ind.), 34-49.

STEINFELD, Helen M(cDonald), *Zoology*. Burlington, Ind, 2/26/99; m. 25, c. 2. A.B, Butler, 21, M.S, Wisconsin, 22; Ph.D, California, 27. California, res. fellow, 39-44.

STEININGER, H(erbert) M(arvin), *Chemistry*. Sterling, Nebr, 6/24/99, m. 24, c. 1. A.B, Kansas, 21. Standard Oil Co. Ind, 29-, ch. chem, 31-.

STEMPEL, Guido H(ermann), Jr, *Organic chemistry*. Bloomington, Ind, 10/7/06; m. 27, c. 1. A.B, Indiana, 27, A.M, 28, Ph.D, 34. Carnegie Inst. Tech, 29-46, assoc. prof, 45-46; Gen. Tire & Rubber Co, head org. res, 46-.

STEMPEL, W(aldemar) M(atthaeus), *Physics*. Ft. Madison, Ia, 8/29/81, m. 07, c. 1. A.B, Indiana, 05; A.M, Illinois, 06. Stevens Inst. Tech, 21-, asst. prof, 22-46, assoc. prof, 46-.

STEPHENS, Maynard Moody, *Petroleum engineering, Economic geology*. Connersville, Ind, 4/25/08; m. 31, c. 5. B.A, Minnesota, 30, M.A, 31, Ph.D, 34. Minnesota, res. geol, 31-36; Ryder Scott Co, 41-.

STEPHENSON, J(oseph) C(lark), *Anatomy*. Sheridan, Ind, 10/21/86, died, 31. B.S, Chicago, 07; Ph.D, Wisconsin, 16; M.D, Rush, 25. Oklahoma, prof, 19-31.

STEPHENSON, Robert M(arlowe), *Chemistry*. Mattoon, Ill, 7/1/12; m. 36, c. 3. A.B, DePauw, 34. Griffith Lab. (Chicago), 35-45; Basic Veg. Prods, Inc, ch. chem, 45-.

STEPHENSON, Roscoe Elmo, *Agriculture*. Campbellsburg, Ind, 11/15/85; m. 20, c. 2. B.S, Purdue, 15; M.S, Illinois, 17; Ph.D, Iowa State Col, 20. Ore. State Col, 23-, prof, 38-.

STEPHENSON, S(eymour) Town, *Physics*. San Jose, Calif, 11/28/10; m. 33, c. 3. B.S, DePauw, 30; Ph.D, Yale, 33. State Col. Wash, 33-, prof, 47-.

STEVENS, A(rthur) L(uke), *Biology*. Portland, Ore, 5/8/14; m. 45, c. 1. B.S, Portland, 36; M.S, Notre Dame, 39, Ph.D, 49. Portland, 37-, asst. prof, 44-.

STEVENS, F(rederick) W(iley), *Physics*. Goshen, Ind, 8/28/61, died, 32. Lake Forest, prof, 91-16; U. S. Bur. Standards, phys, 19-.

STEVENS, Hazel H(ansford), *Clinical psychology*. Romona, Ind, 3/15/91; m. 34. A.B, Indiana, 13, Ph.D, 20. Madison State Hosp, Inc, dir. outpatient dept, 19-34; Family Service Assn. (Indianapolis), clin. psych, 34-40; Indiana, 40-.

STEVENS, H(erman) C(ampbell), *Neurology*. Elkhart, Ind, 11/12/78, died, 34. A.B, Michigan, 01; Ph.D, Cornell, 05; M.D, Rush, 14. Chicago, assoc. prof, 13-18; Illinois, asst. prof, 18-.

STEVENSON, Earl P(lace), *Chemistry*. Logansport, Ind, 10/2/93; m. 19, c. 3. B.S, Wesleyan, 16; M.S, Mass. Inst. Tech, 18. Arthur D. Little, Inc, dir. res, 20-35, v. p, 22-35, pres, 35-.

STEVENSON, E(dward) L(uther), *History, Geography*. Rozetta, Ill, 10/18/60, died, 44. A.B, Franklin Col, 81, A.M, 83; Ph.D, Heidelberg, 91. Sch. supt, Ind, 83-84; Rutgers, prof, 92-11.

STEVENSON, E(lmer) C(lark), *Plant breeding*. Pine City, Wash, 8/20/15; m. 39, c. 3. B.S, Maryland, 37; Ph.D, Wisconsin, 42. Purdue, assoc. prof, 48-.

STEWART, G(eorge) W(alter), *Physics* (starred). St. Louis, Mo, 2/22/76; m. 04, c. 1. A.B, DePauw, 98; Ph.D, Cornell, 01. Iowa, prof, 09-46. Natl. Acad. Sci; Sigma Xi (pres, 30-32); Am. Physical Soc. (pres, 41).

STEWART, Lincoln, *Geology*. Peru, Ind, 9/13/89; m. 19. A.B, Stanford, 14; M.A, California, 17; Ph.D, Columbia, 36. Wittenberg Col, assoc. prof, 46-.

STEWART, O(scar) M(ilton), *Physics* (starred). Neosho, Mo, 11/3/69. Ph.B, DePauw, 92; Ph.D, Cornell, 97. Missouri, 01-40, prof, 05-40.

STEWART, Robert A(therton), *Nutrition*. St. Louis, Mo, 5/8/13. A.B, Butler, 35; M.S, Pa. State Col, 38, Ph.D, 40. Quaker Oats res. labs, 40-.

STICKEL, William H(enson), *Biology*. Terre Haute, Ind, 11/8/12; m. 41. B.S, Michigan, 34, M.A, 35. U. S. Fish & Wildlife Serv, 41-.

STIER, Theodore James, *Physiology*. Sayreville, N. J, 9/4/03; m. 28. B.S, Rutgers, 25; A.M, Harvard, 27, Ph.D, 29. Indiana, 42-, prof, 47-.

STILES, H(ugh) R(aymond), *Biochemistry, Bacteriology*. Lake Mills, Wis, 12/25/99; m. 26, c. 5. B.S, Wisconsin, 24, Ph.D, 29. Commercial Solvents Corp. (Terre Haute), 26-, in chg. bact. res, 37-48, tech. dir, 48-.

STILL, Alfred, *Electrical engineering*. Gloucestershire, Eng, 1/28/69; m. 02, c. 4. Purdue, prof, 13-34; retired.

STINE, Harrison M., *Chemistry*. Peoria, Ill, 4/5/16; m. 43. B.S, Purdue, 38; Ph.D, Western Reserve, 46. Standard Oil Co. Ohio, res, 38-.

STINETORF, Roscoe, *Physics*. Rockford, Ill, 11/28/00. A.B, Earlham Col, 29; M.S, Pennsylvania, 31, Ph.D, 34. Lander Col, prof. math, 37-.

STITT, Fred (Beals), *Chemistry*. Butler, Pa, 9/23/11; m. 35. B.S, Carnegie Inst. Tech, 32, M.S, 33; Ph.D, Calif. Inst. Tech, 36. Indiana, instr, 39-41; U. S. Dept. Agr, res. chem, 41-.

STOCK, C(harles) Chester, *Biochemistry*. Terre Haute, Ind, 5/19/10; m. 36. B.S, Rose Poly. Inst, 32; Ph.D, Hopkins, 36; M.S, N. Y. U, 41. Sloan-Kettering Inst, ch. div. exp. chemotherapy, 47-.

STOCKBARGER, D(onald) C(harles), *Physics*. Walkerton, Ind, 10/19/95; m. 22, c. 2. S.B, Mass. Inst. Tech, 19, Sc.D, 26. Mass. Inst. Tech, 20-, assoc. prof, 35-.

STOCKDALE, Paris B(uell), *Geology*. Frankfort, Ind, 8/30/96; m. 23, c. 1. A.B, Indiana, 19, A.M, 21, Ph.D, 30. Ohio State, 21-41, assoc. prof, 33-41; Tennessee, prof, 41-. Stratigraphy of southeastern Indiana.

STOCKETT, Stewart J(oseph), *Chemical engineering.* Brighton, Colo, 1/19/13; m. 34, c. 2. B.S, Ind. Tech. Col, 40. Joslyn Mfg. & Supply Co. (Ind.), 38-41; Gen. Elec. (Ind.), metal, 41-45; Battelle Mem. Inst, res, 45-.

STOEVER, H(erman) J., *Thermodynamics.* Evansville, Ind, 6/8/07; m. 35, c. 2. B.S, Purdue, 28; M.S, Illinois, 30, Ph.D, 34. Purdue, asst. prof, 36-37; Iowa State Col, 38-, prof, 43-.

STOKELY, Paul Scott, *Biology.* Cambridge, O, 2/12/15. A.B, Muskingum Col, 38; M.S, Notre Dame, 43, Ph.D, 47. Notre Dame, instr, 46-.

STOLTZ, Cha(rle)s, *Physician.* South Bend, Ind, 1/17/64, died, 31. "A leader" in medicine and science, South Bend, 95-31. Ind. Acad. Sci. (v. p, 17, 24, 25).

STOLTZ, Spencer G(ordon), *Chemistry.* Gettysburg, O, 8/7/85; m. 13, c. 1. S.B, Valparaiso, 12; S.B, Chicago, 16, S.M, 18, Ph.D, 31. Col. St. Catherine, prof, 21-36.

STONAKER, Howard Hampson, *Animal husbandry.* Bedford, Ind, 8/4/17; m. 47. B.S, Purdue, 39; M.S, Iowa State Col, 41, Ph.D, 42. Colo. A. & M. Col, prof, 43-.

STONE, Calvin P(erry), *Psychology* (starred). Portland, Ind, 2/28/92; m. 17, c. 3. B.S, Valparaiso, 10; M.A, Indiana, 16; Ph.D, Minnesota, 21. Ind. Reformatory, dir. res, 16-17; Stanford, 22-, prof, 29-. Natl. Acad. Sci; Psychol. Assn. (pres, 42).

STONE, G(wyn) Raymond, *Psychology.* Madison, Wis, 8/18/16; m. 42, c. 1. Ph.B, Wisconsin, 38; A.M, Missouri, 40; Ph.D, Indiana, 46. Indiana, instr, 44-46; Oklahoma, asst. prof, 46-.

STONE, Ralph B(ushnell), *Mathematics.* Templeton, Mass, 6/4/82; m. 13, c. 1. A.B, Bowdoin Col, 02; A.M, Harvard, 04. Purdue, 12-, assoc. prof, 22-.

STONE, Winthrop Ellsworth, *Chemistry.* Chesterfield, N. H, 6/12/62, died, 21. B.S, Mass. Col, 82; Ph.G, Gottingen, 88. Purdue, prof, 89-92, v. p, 92-00, pres, 00-21.

STONEKING, J(ohn) A(ndrew), *Physics.* Delaware, Ind, 3/13/63. A.B, Indiana, 98, A.M, 01. Ind. pub. and high schs, 83-95; Indiana, instr, 97-15.

STOOPS, Charles E(mmet), *Chemical engineering.* Grove City, Pa, 12/17/14; m. 43, c. 3. B.Ch.E, Ohio State, 37; Ph.D, Purdue, 42. Phillips Petrol. Co. (Okla.), 44-.

STOOPS, J(ames) A(merman), *Chemistry.* Greencastle, Ind, 10/4/12; m. 39, c. 2. A.B, DePauw, 33; A.M, Indiana, 35, Ph.D, 38. Morehead State Col. (Ky.), prof, 47-.

STOPHER, Emmet C(arson), Jr, *Topology.* Noblesville, Ind, 6/5/10; m. 36, c. 4. A.B, Miami (O.), 32; B.S, Kent State, 32; M.S, Iowa, 33, Ph.D, 37. Miami (O.), instr, 47-49.

STORK, H(arvey) E(lmer), *Botany.* Zoar, Ind, 3/28/90; m. 22, c. 2. A.B, Ind. State Nor. Sch, 14; A.M, Indiana, 15; Ph.D, Cornell, 20. Carleton Col, 20-, prof, 26-.

STORMS, Lee B(ourland), *Chemistry.* Evansville, Ind, 1/1/16; m. 40, c. 1. B.S, Indiana, 36, A.M, 37, Ph.D, 39. Red Spot Paint & Varnish Co. (Evansville), 36-, tech. dir, 39-.

STOUT, Lawrence E(dward), *Chemical engineering.* Seymour, Ind, 3/30/98; m. 25, c. 2. A.B, DePauw, 19; M.S, Ohio State, 21, Ph.D, 23. Washington (St. Louis), 27-, prof, 37-, dean sch. eng, 48-.

STOUT, W(hitney) B(owman), *Agricultural economics.* Circleville, O, 3/23/99; m. 25, c. 2. B.Sc, Ohio State, 22, M.S, 28, Ph.D, 30. Purdue, exten. econ, 31-35; U. S. Dept. Agr, sr. exten. econ, 35-46.

STRAIN, Charles V(ictor), *Physics.* Putnam, Ind, 1/10/10; m. 38, c. 2. A.B, DePauw, 32; M.A, Rochester, 36, Ph.D, 38. Naval res. lab, 46-.

STRAIN, D(aniel), *Chemistry.* Bainbridge, Ind, 7/28/03; m. 28, c. 3. A.B, DePauw, 25; A.M, Ohio State, 27, Ph.D, 29. Dupont Co, exp. sta, 29-.

STRAIN, Warren T(hoburn), *Geography.* Reelsville, Ind, 2/7/02; m. 34. A.B, Ind. State Col, 26; M.S, Wisconsin, 30, Ph.D, 33. Pa. State Teachers Col. (Slippery Rock), 35-.

STRANDHAGEN, Adolf G(ustav), *Engineering mechanics.* Scranton, Pa, 5/4/14; m. 41, c. 2. B.S, Michigan, 39, M.S, 30, Ph.D, 42. Notre Dame, assoc. prof, 47-.

STRATTON, Arthur J(ohn), *Chemistry.* Flushing, O, 2/3/01; m. 30, c. 4. B.S, Earlham Col, 27; M.S, Ohio State, 29. Earlham Col, instr, 27-28; Dupont Co, 29-.

STRATTON, Dorothy C(onstance), *Psychology, Education.* Brookfield, Mo, 3/24/99. B.A, Ottawa, 20; A.M, Chicago, 24; Ph.D, Columbia, 33. Purdue, 33-, prof, 39-.

STRATTON, E(verett) F(ranklin), *Geology, Geophysics.* Cambridge City, Ind, 7/1/07; m. 28, c. 1. A.B, DePauw, 28; A.M, Harvard, 31, Sc.D, 32. Schlumberger Well Surv. Corp, 36-.

STRATTON, W(illiam) T(imothy), *Mathematics.* Redkey, Ind, 12/10/80; m, c. 2. A.B, Indiana, 06, A.M, 14; Ph.D, Washington, 31. Kans. State Col, 12-, prof, 23-46.

STRICKLAND, B(arney) R(alph), *Organic chemistry.* Nahunta, Ga, 12/29/12; m. 38, c. 1. B.S, Berry Col, 35; M.S, Purdue, 37, Ph.D, 39. Standard Oil Develop. Co, 38-.

STRICKLER, A(lvin), *Chemistry.* Caledonia, Mich, 9/1/89; m. 08, c. 1. A.B, Mich. State Nor. Col, 13; B.S, Michigan, 14, M.S, 15; Ph.D, Wisconsin, 21. Evansville Col, prof, 21-.

STRICKLER, P(aul) M(eredith), *Physics.* Haddam, Kans, 5/22/06; m. 35, c. 1. A.B, Col. Emporia, 28; A.M, Kansas, 29, Ph.D, 37. Ind. Cent. Col, prof, 37-42; Sterling Col, 42-.

STRONG, Leon H(enri), *Embryology.* Richmond, Va, 2/16/89. A.B, Arizona, 11, B.S, 15; Ph.D, California, 25. Indiana, asst. prof, 25-27; Michigan, asst. prof, 29-.

STRONG, Martha T(hompson), *Anatomy.* Ashton, Nebr, 9/6/97; m. 25, c. 1. B.S, Knox Col, 20; M.A, California, 25; Ph.D, Indiana, 36. Indiana, 36-, asst. prof, 42-.

STRONG, Ralph Kempton, *Chemistry.* Kentville, N. S, Can, 6/21/82. B.A, Acadia Col, 05, B.Sc, 06; A.M, Harvard, 07; Ph.D, Chicago, 17. Reed Col, prof, 20-33; Rose Poly. Inst, prof, 36-.

STRONG, Wendell M(elville), *Mathematics.* Indianapolis, Ind, 2/6/71, died, 42. A.B, Yale, 93, Ph.D, 98; A.M, Cornell, 94. Mutual Life Ins. Co. N. Y, pres. and actuary, 00-41.

STROTHER, George B., *Clinical psychology.* Kansas City, Mo, 5/4/18; m. 45. A.B, Missouri, 38, M.A, 39; Ph.D, Indiana, 42. Minnesota, prof, 47-.

STROUD, P(aul) W(allace), *Chemical engineering.* Cucamonga, Calif, 7/17/02. A.B, Pomona Col, 25; A.M, Columbia, 28; Sc.D, Colo. Sch. Mines, 34. Standard Oil Co. Ind, res, 34-.

STROUP, P(hillip) T(rimble), *Chemistry, Metallurgy.* Mishawaka, Ind, 2/17/04; m. 30, c. 2. A.B, Indiana, 25, A.M, 26; Ph.D, Wisconsin, 29. Aluminum Co. Am, 29-, metal, 36-42, ch. chem. develop. div, 42-.

STRUWIN, (William) Richard, *Electronics.* Battle Creek, Mich, 6/4/12; m. 36, c. 1. A.B, Battle Creek Col, 32; M.S, Mich. State Col, 36. Tri-State Col. (Ind.), prof, 40-42; Olivet Col, instr, 49-.

STUART, Elmer H(enry), *Pharmaceutical chemistry.* Clinton Co, Ind, 2/25/91; m. 46. A.B, Indiana, 14, A.M, 15. Eli Lilly & Co, res, 16-.

STUART, W(illia)m, *Horticulture.* St. Remi, Que, Can, 5/21/65, nat, 95; m. 97, c. 2. B.Sc, Vermont, 94; M.Sc, Purdue, 96. Purdue, exp. sta, 94-02; U. S. Dept. Agr, 12-35.

STUBBLEFIELD, Edward M(addux), *Chemistry.* Viola, Tenn, 12/14/14; m. 39. B.S, Chattanooga, 37; M.S, Notre Dame, 39. Servel, Inc. (Evansville), 40-, metal, 42-44, res. eng, 44-.

STUBBLEFIELD, Henry I(ngham), *Bacteriology.* St. Louis, Mo, 7/13/97; m. 22, c. 2. B.Sc, Southeast Mo. State Teachers Col, 20; Ph.D, Nebraska, 26; M.D, Northwestern, 32. Swan-Myers Co. (Indianapolis), res, 26-28; Dept. U. S. Army, res, 46-.

STUBBS, F(rank) W(hitworth), *Civil engineering.* Mancos, Colo, 5/28/98; m. 22, c. 1. B.S, Colorado, 21, C.E, 26; M.S, Illinois, 32. Purdue, prof, 47-.

STUCKWISCH, C(larence) G(eorge), *Chemistry.* Seymour, Ind, 10/13/16; m. 42, c. 2. A.B, Indiana, 39; Ph.D, Iowa State Col, 43. Wichita, 45-, assoc. prof, 48-.

STULLKEN, Donald E(dward), *Physiology.* Sullivan, Ill, 4/11/20; m. 42, c. 2. B.A, DePauw, 41; M.S, Purdue, 42. Purdue, 42-, instr. wildlife conserv. and asst. game mgt, 48-.

STUPPY, George William, *Medicine.* Ind, 3/11/98; m. 22. B.S, Purdue, 20, M.S, 22; Ph.D, Chicago, 29, M.D, 32. Illinois, asst. prof, 32-.

STURDEVANT, Earl Grover, *Chemistry.* Salem, Ind, 2/22/93; m. 23, c. 1. A.B, Indiana, 15, A.M, 16; Ph.D, Michigan, 20. Grasselli Chem. Co. (Ind.), 16-17; West. Elec. (Chicago), 23-29; U. S. Rubber Co, 29-, tech dir, 32-.

STURGEON, W(illiam) E(lias), *Chemistry.* Alamo, Tenn, 10/16/80; m. 25, c. 3. A.B, Texas Christian, 09; Ph.D, Chicago, 29. Notre Dame, asst. prof, 27-30; Beaver Col, prof, 30-.

STURGIS, Bernard M(iller), *Organic chemistry.* Butler, Ind, 11/27/11; m. A.B, DePauw, 33; Ph.D, Mass. Inst. Tech, 36. Dupont Co, 36-, head petrol. chem. div, 46-.

STURM, R(olland) G(eorge), *Engineering, Mathematics.* Riverview, Ill, 3/24/99; m. 26, c. 3. B.S, Nebraska, 24, C.E, 38; M.S, Illinois, 26, Ph.D, 36. Purdue, prof, 44-.

STURMER, J(ulias) W(illiam), *Pharmacy, Chemistry.* Niagara Co, N. Y, 3/6/70. Ph.G, Purdue, 91; Phar.D, Buffalo, 12; Ph.M, Phila. Col. Phar, 17. Purdue, 91-12, prof, 94-12; Phila. Col. Phar, dean, 16-43.

STUTZMAN, Leroy F(ranklin), *Chemical engineering.* Indianapolis, Ind, 9/5/17; m. 39, c. 2. B.S, Purdue, 39, M.S, Kans. State Col, 40; Ph.D, Pittsburgh, 45. Northwestern, asst. prof, 43-.

SULLIVAN, Frederick W., Jr, *Chemistry.* Erie, Pa, 5/25/95; m. B.S, Michigan, 18, M.S, 19, Ph.D, 21. Standard Oil Co. Ind, dir. res, 23-38.

SULLIVAN, J(oseph) T(imothy), *Plant physiology.* Lawrence, Mass, 1/8/00; m. 27, c. 4. B.S, Mass. Col, 22; M.S, New Hampshire, 24; Ph.D, Purdue, 35. Purdue, exp. sta, 26-37; U. S. Dept. Agr, 37-.

SULLIVAN, Miles V(incent), *Physical chemistry.* Fargo, N. Dak, 8/19/17; m. 48. A.B, Wabash Col, 41; M.S, Purdue, 42, Ph.D, 48. Bell Telephone Labs, 48-.

SUMMERS, William A(llen), *Medical parasitology.* Gary, Ind, 4/22/14; m. 40, c. 2. A.B, Illinois, 35, M.S, 36; Ph.D, Tulane, 40. Indiana, asst. prof, 47-.

SUMRALL, W(illiam) H(erbert), *Psychology.* Laurel, Miss, 12/2/88; m. 17, c. 2. B.S, Clarke Mem. Col, 15; B.A, Miss. Col, 24, M.A, 25; Ph.D, Indiana, 29. Miss. Col, 24-, dean grad. studies, 47-.

SUNDERLIN, Gertrude, *Nutrition.* Delmar, Ia, 94. B.S, Iowa State Col, 19, M.S, 26, Ph.D, 28. Purdue, 31-, prof, 47-.

SUPPLE, Lee F(rancis), *Chemistry.* Columbia City, Ind, 8/15/85; m. 18, c. 2. B.S, Michigan, 13. Lewis Inst, 13-36, assoc. prof, 30-36; Ill. Inst. Tech, prof, 36-49.

SUSIE, Alfred G(eorge), *Organic chemistry.* Midland, Pa, 1/18/10; m. 40, c. 4. B.S, Ohio Northern, 32; Ph.D, Purdue, 39; M.S, Toledo, 37. Gustavus J. Esselen, Inc, 39-45; Marbon Corp, ch. chem, 45-49.

SUTHERLAND, L(eslie) Hunt, *Chemistry.* New Bedford, Mass, 6/11/15. A.B, Dartmouth Col, 36; M.S, Pa. State Col, 38, Ph.D, 40. Reilly Tar & Chem. Corp. (Indianapolis), 41-.

SUTHERLAND, O(rlando) P(latt), *Geodesy.* Springville, Ind, 4/20/89; m. 11. Valparaiso and Indiana, 06-16. Ind. sch. supt, 10-16; U. S. Coast & Geod. Surv, 16-, ch. computing div, 27-29, math, 29-.

SUTTLE, John Francis, *Chemistry.* Denver, Colo, 7/22/14; m. 41, c. 2. A.B, Colorado, 41; Ph.D, West. Reserve, 44. Indiana, instr, 44-46; New Mexico, asst. prof, 47-.

SUTTON, A(rle) H(erbert), *Geology.* Columbus, Ind, 8/4/96; m. 29. A.B, Ind. State Teachers Col, 21; Ph.D, Chicago, 27. Illinois, 27-46, prof, 45-46; Aluminum Co. Am, Fluorspar Div, 42-.

SUYDAM, V(ernon) A(ndrew), *Physics.* Waupaca, Wis, 3/21/72; m. 12, c. 1. B.S, Wisconsin, 96; Ph.D, Princeton, 12. Indiana, instr, 07-09; Beloit Col, prof, 23-43; Iowa, assoc. prof, 43-46.

SVENDSEN, E(dward) C(harles), *Chemical engineering.* Indianapolis, Ind, 10/22/15; m. 39, c. 2. B.S, Purdue, 37. U. S. Rubber Co. (Mishawaka, Ind.), 38-, tech. supt, 44-.

SWAIM, Verne Frank, *Physics.* Bloomingdale, Ind, 4/21/86; m. 16. B.S, Earlham Col, 09; Ph.D, Chicago, 14. Bradley Poly. Inst, prof, 13-42; Aberdeen Proving Ground, res, 42-47; U. S. Naval Aviation Ordnance Test Sta, 47-.

SWAIN, Joseph, *Biology, Mathematics.* Pendleton, Ind, 6/16/57, died, 27; m. 85. B.L, Indiana, 83, M.S, 85. Indiana, 83-02, prof, 86-91, pres, 93-02; Swarthmore Col, pres, 02-21. Natl. Educ. Assn. (pres, 13-14).

SWANEY, Miller W(oodson), *Chemistry.* Gallatin, Tenn, 2/29/12; m. 37, c. 3. B.E, Vanderbilt, 31, M.S, 32; Ph.D, Purdue, 35. Standard Oil Develop. Co, Esso Labs, 39-, asst. res. dir, 47-.

SWANK, Howard W(igton), *Analytical chemistry.* Butler, O, 1/30/10. B.S, Mt. Union Col, 32; M.S, Purdue, 34, Ph.D, 37. Dupont Co, rayon dept, 37-.

SWANSON, Edward E., *Pharmacology.* Minneapolis, Minn, 1/3/93; m. 29, c. 2. Ph.G, Iowa, 16, Ph.C, 17, B.S, 18. Eli Lilly & Co, bioassay dept. head, 20-.

SWANSON, Eric W(allace), *Dairy science.* Knox, Ind, 6/14/18; m. 41. B.S, Purdue, 39; A.M, Missouri, 40, Ph.D, 43. Tennessee, assoc. prof, 47-.

SWARTZ, Delbert, *Botany.* Metamora, Ind, 4/24/00; m. 28, c. 1. A.B, Miami (O.), 22; M.S, Mich. Agr. Col, 24; Ph.D, Michigan, 31. Arkansas, 29-, prof, 44-.

SWAZY, Earl F(rancis), *Chemistry.* New Castle, Ind, 4/1/06; m. 40, c. 1. A.B, Indiana, 34. Chrysler Corp. (Ind.), 34-35; P. R. Mallory & Co. (Indianapolis), 35-, mgr. metal. res. dept, 45-.

SWEAZEY, G(eorge) B(eaty), *Organic chemistry.* Allensville, Ind, 4/12/75, died, 46. A.B, Wabash Col, 97, A.M, 00. Westminister Col. (Utah), prof, 97-17; Westminster Col. (Mo.), prof, 17-.

SWEET, Harold S(inclair), *Civil engineering.* Butte, Mont, 2/20/19; m. 39, c. 2. B.S, Wyoming, 39; M.S, Purdue, 41, Ph.D, 48. Purdue, 45-48; Wyoming, asst. prof, 48-.

SWEETING, Orville J(ohn), *Organic chemistry.* Rochester, N. Y, 10/26/13; m. 42, c. 1. A.B, Cornell, 35, Ph.D, 42. Indiana, instr, 44-46; Colorado, 46-, assoc. prof, 49-.

SWIFT, E(lijah), Jr, *Physical chemistry.* Princeton, N. J, 6/15/10. B.S, Harvard, 32, A.M, 33, Ph.D, 37. Indiana, instr, 42-.

SWIFT, Lyle J(ames), *Agricultural biochemistry*. Eaton Co, Mich, 9/17/06; m, c. 3. B.S, Mich. State Col, 35, M.S, 36; Ph.D, Purdue, 44. Purdue, 36-44; U. S. Dept. Agr, 44-.

SWIGART, J(ohn) Irvin, *Experimental physics*. Metcalf, Ill, 1/31/04; m. B.S, Ill, Wesleyan, 29; A.M, Indiana, 30, Ph.D, 38. Utah, 31-, prof, 46-.

SWINDLER, J(ames) A(lbert), *Physics*. Advance, Ind, 5/20/87; m. 14, c. 3. B.S, Cent. Nor. Col, 08; A.B, Indiana, 13, A.M, 15, Ph.D, 25. Westminster Col. (Pa.), prof, 19-.

SWISHER, Margaret C., *Organic chemistry*. Moundsville, W. Va, 6/26/99; m. 34. Ph.G, Colorado, 19, Ph.C, 20, B.S, 21, M.S, 22, Ph.D, 25. Purdue, instr, 25-27; Eli Lilly & Co, 27-29; Buffalo, 29-, assoc. prof, 45-.

SWITZER, H(erbert) B(razilla), *Bacteriology, Food sanitation*. Bradford, N. Y, 6/25/88. B.S.A, Cornell, 12. Purdue, 12-17, asst. prof, 15-17; U. S. Dept. Agr, 17-39.

SWITZER, J(esse) E(lmer), *Geography*. Waynetown, Ind, 9/26/76; m. 11, 41, c. 1. B.S, Chicago, 11; Ph.D, Clark, 23. Indiana, 23-47, prof, 36-47. Ind. Acad. Sci. (v. p, 51).

SYMON, Keith R(andolph), *Mathematical physics*. Ft. Wayne, Ind, 3/25/20; m. 43, c. 2. S.B, Harvard, 42, A.M, 43, Ph.D, 48. Wayne, 47-, asst. prof, 48-.

SZMANT, H(erman) Harry, *Organic chemistry*. Kalisz, Poland, 5/18/18, nat, 44; m. 41, c. 2. B.A, Ohio State, 40; Ph.D, Purdue, 44. Duquesne, assoc. prof, 46-.

TAGUE, Edgar L(emuel), *Chemistry*. Haney's, Ind, 1/30/73, died, 34. A.B, Kansas, 08, A.M, 09, Ph.D, 24. Kansas State Col, 14-34, assoc. prof, 25-34.

TALIAFERRO, H(arold) R(ichard), *Chemical engineering*. Effingham, Kans, 2/14/16; m. 44, c. 2. B.S, Kansas, 38. Standard Oil Co. Ind, 40-, group leader, 46-.

TALLMAN, Arthur W(ince), *Bacteriology*. Cando, N. Dak, 8/26/06; m. 32. B.S, Purdue, 28, M.S, 30; Ph.D, Western Reserve, 44. E. R. Squibb & Sons, 46-.

TANCIG, W(illiam) J(ere), *Analytical chemistry*. Chisholm, Minn, 3/8/16; m. 42, c. 2. S.B, Chicago, 38, S.M, 39. Standard Oil Co. Ind, 39-, group leader anal. methods, 46-.

TAPY, Ralph W(ilver), *Electrical engineering*. Terre Haute, Ind, 9/17/02; m. 27. B.S, Rose Poly. Inst, 26, E.E, 36; M.S, Michigan, 33. New Mexico, 34-, assoc. prof. to prof, 39-.

TASKER, Roy C(arleton), *Zoology*. Angola, Ind, 2/19/96; m. 23, c. 2. A.B, Hillsdale Col, 21; A.M, Michigan, 22; Ph.D, Cornell, 34. DePauw, instr, 22-25; Bucknell, 34-, prof, 48-.

TAYLOR, Dorothy M(ae), *Physics*. Dubuque, Ia, 7/13/12. B.A, Indiana, 33, M.A, 34. Dubuque, prof, 42-.

TAYLOR, Frank B(ursley), *Geology* (starred). Ft. Wayne, Ind, 11/23/60, died, 38. Harvard, 82-86; U. S. Geol. Surv, 00-16. Glacial geology of Indiana.

TAYLOR, J(ames) Earl, *Chemistry*. Greenfield, Ind, 12/17/99; m. 23, c. 1. A.B, Wittenberg Col, 22; M.A, Ohio State, 24, Ph.D, 27. Procter & Gamble, res, 27-42.

TAYLOR, M(aurice) C(raig), *Chemistry*. Howe, Ind, 2/28/94; m. 18, c. 3. B.S, Purdue, 18. Mathieson Alkali Works, res, 19-49.

TAYLOR, Robert Dewey, *Medicine*. Hecla, S. Dak, 3/3/14; m. 34, c. 2. B.S, South Dakota, 37; B.M, Northwestern, 39, M.D, 40. Lilly Lab. Clin. Res, 41-43; Indianapolis City Hosp, 43-45; Indiana, sch. med, instr, 44-45.

TAYLOR, Robert F(ranklin), *Organic chemistry*. Cambridge, Ill, 2/7/15. B.S, Beloit Col, 37; Ph.D, Wisconsin, 41. Commercial Solvents Corp. (Terre Haute), 41-.

TAYLOR, Robert S(eth), *Physical chemistry, Technology*. Ft. Worth, Tex, 4/13/98; m. 19, c. 1. A.B, Texas, 19, A.M, 20; Ph.D, Mass. Inst. Tech, 23. Electrolux Servel Corp. (Evansville), res. eng, 26-34; Servel, Inc, ch. eng, 34-.

TAYLOR, S(amuel) N(ewton), *Physics*. Farmingdale, N. Y, 4/24/58. Ph.B, Wesleyan, 87; Ph.D, Clark, 96. Purdue, instr, 96-99; Goucher Col, prof, 11-33.

TEAGUE, Merwyn C(larence), *Chemistry*. Pendleton, Ind, 6/17/90; m. 29, c. 2. A.B, Wabash Col, 14; A.M, Princeton, 17, Ph.D, 20. Vincennes, prof, 14-15; U. S. Rubber Co, res, 20-26, 38-44.

TEBBE, Robert F(rederick), *Chemistry*. Red Wing, Minn, 11/6/20; m. 46, c. 2. B.A, St. Olaf Col, 41; Ph.D, Purdue, 45. Purdue, res, 45-46; Maine, asst. prof, 46-.

TEEPLE, John E(dgar), *Chemistry* (starred). Kempton, Ill, 1/4/74, died, 31; m. 97, c. 3. B.S, Valparaiso, 93, A.B, 94; Ph.D, Cornell, 03. Cornell, instr, 99-04; cons. chem, N. Y. C, 04-31. Perkins Medal, 27.

TEETER, T(homas) A(nderson) H(endricks), *Civil engineering*. Rolling Prairie, Ind, 2/12/86; m, c. 4. B.S, Purdue, 07. Ore. State Col, 13-20; Minnesota, 22-, dean, 47-.

TEETERS, W(ilbur) O(ldroyd), *Chemistry*. Dover, O, 5/31/08. B.S, Butler, 29; M.S, N. Y. U, 31, Ph.D, 35. Hoke, Inc. (N. Y.), pres, 39-.

TEITEL, Robert J(errell), *Metallurgy*. Indianapolis, Ind, 8/4/22. B.S, Purdue, 44; Sc.D, Mass. Inst. Tech, 48. Brookhaven Natl. Labs, 48-.

TELFAIR, David, *Physics*. Sabina, O, 8/12/12; m. 39, c. 4. A.B, Earlham Col, 36; A.M, Haverford Col, 37; Ph.D, Pa. State Col, 41. Monsanto Chem. Co, 41-46; Earlham Col, 46-, assoc. prof, 48-.

TERHUNE, Charles Houston, *Aeronautical engineering*. Dayton, O, 5/7/16; m. 39, c. 2. B.S, Purdue, 38; Ae.E, Calif. Inst. Tech, 41. U.S.A.F. (Wash, D. C.), guided missiles branch, 47-.

TERMAN, F(rederick) E(mmons), *Electrical engineering*. English, Ind, 6/7/00; m. 28, c. 3. A.B, Stanford, 20, E.E, 22; Sc.D, Mass. Inst. Tech, 24. Stanford, 25-, prof, 37-45, dean, 45-. Natl. Acad. Sci; Inst. Radio Eng. (pres, 41). (Son of L. M. T.; one of very few father-and-sons in Natl. Acad. Sci. at same time.)

TERMAN, Gilbert L(eroy), *Agronomy*. Whitley, Ind, 10/18/13; m. 41, c. 3. B.S, Kans. State Col, 38; Ph.D, Wisconsin, 41. Maine, prof, 46-.

TERMAN, Lewis M(adison) *Psychology* (starred). Johnson Co, Ind, 1/15/77; m. 99, c. 2. A.B, Cent. Nor. Col, 98; A.B, Indiana, 02, A.M, 03, Ph.D, Clark, 05. Stanford, 10-42, prof, 16-42. Psychol. Assn. (pres, 23); Natl. Acad. Sci. Mental and achievement tests; gifted children; personality; marriage.

TERRY, Ira A(nderson) *Electrical engineering*. Ogden, Ut, 10/31/03; m. 26, c. 2. B.S, Utah, 25; M.S, Union Col, 29. Gen. Elec, 27-, asst. mgr. eng. (Ft. Wayne), 47-.

TERRY, Oliver P(erkins), *Physiology*. Lafayette, Ind, 7/23/82, died, 33. B.S, Purdue, 03; M.S, M.D, St. Louis, 06. Purdue, asst. prof, 06-33.

TERRY, Robert L(ee), *Physiology*. Mt. Holly, N. J, 8/7/18; m. 43, c. 1. A.B, Earlham Col, 39; Ph.D, Pennsylvania, 48. Union Col. (N. Y.), asst. prof, 48-.

TEST, Frederick H(arold), *Zoology*. Rolla, Mo, 4/16/12. B.S, Purdue, 34; A.M, Cornell, 35; Ph.D, California, 40. Michigan, instr, 40-.

TEST, Louis Agassiz, *Chemistry*. Dundee, Ill, 6/18/74, died, 43. B.M.E, Purdue, 94, A.C, 96; Ph.D, Chicago, 07. Purdue, prof, 18-40. Active in bird banding, 24-39. Ind. Acad. Sci. (v. p, 39).

TEST, W(illiam) H(enry), *Chemistry*. Richmond, Ind, 2/1/71. B.S, Purdue, 92, M.S, 93. Purdue, 95-, asst. prof, 01-.

TETER, John W(atson), *Chemistry*. Bellingham, Wash, 12/24/08; m. 34, c. 2. A.B, DePauw, 30; B.S, Chicago, 32. Sinclair Ref. Co, 34-, div. ch, catalysis res, 40-.

TETRAULT, P(hilippe) A(rmand), *Bacteriology*. Southbridge, Mass, 9/6/89; m. 24, c. 3. A.B, Clark, 12; M.S, Purdue, 14; Ph.D, Wisconsin, 29. Purdue, 14-, prof, 30-.

TEVEBAUGH, Arthur D(avid), *Physical chemistry*. Knox Co, Ind, 11/25/17; m. 43, c. 2. B.S, Purdue, 40; Ph.D, Iowa State Col, 47. Manhattan proj, 42-47; Knolls Atomic Power Lab, Gen. Elec, 47-.

THEROUX, Frank R., *Civil engineering*. New Haven, Conn, 1/27/91; m. 18, c. 7. C.E, Valparaiso, 15; M.C.E, Cornell, 24. Valparaiso, dean eng, 17-22; Miami, 26-28; Mich. State Col, prof. sanit. eng, 29-.

THIELE, Ernest William, *Chemical engineering*. Chicago, Ill, 12/8/95. A.B, Loyola (Ill.), 16; B.S, Illinois, 19; M.S, Mass. Inst. Tech, 23, Sc.D, 25. Standard Oil Co. Ind, 25-, asst. dir. res, 35-.

THIENES, C(linton) H(obart), *Pharmacology*. Evansville, Ind, 8/9/96; m. 23, c. 3. A.B, Oregon, 18, A.M, M.D, 23; Ph.D, Stanford, 26. South. California, 29-, prof, 31-.

THOMAS, Ancil R(idgway), *Physics*. Amboy, Ind, 5/18/01; m. 26, c. 4. B.S, Earlham Col, 25; M.S, Washington (St. Louis), 27, Ph.D, 30. Valparaiso, 29-, prof, 37-.

THOMAS, Donald G(ordon), *Organic chemistry*. Detroit, Mich, 5/20/13; m. 42, c. 2. A.B, Michigan, 34, Ph.D, 40. Indiana, instr, 41-44; Upjohn Co, 44-.

THOMAS, Harold A(llen), *Hydraulic engineering*. Ann Arbor, Mich, 7/24/85; m. 10, c. 4. A.B, Columbia, 04, C.E, 08. Rose Poly. Inst, assoc. prof. to prof, 11-22; Carnegie Inst. Tech, prof, 23-.

THOMAS, Harold A(llen), Jr, *Engineering*. Terre Haute, Ind, 8/14/13. B.S, Carnegie Inst. Tech, 35; M.S, Harvard, 37, Sc.D, 38. Harvard, instr. sanit. eng, 38-.

THOMAS, Mason B(lanchard), *Botany* (starred). New Woodstock, N. Y, 12/16/66, died, 16. B.S, Cornell, 90, Ph.D, 07. Wabash Col, prof, 91-16, dean faculty, 07-16. Ind. Acad. Sci. (pres, 01). Forestry problems in Indiana; fungi of Indiana. An exceptionally successful teacher—five of his students became starred botanists.

THOMAS, Robert J(oseph), *Chemistry*. Lowell, Mass, 7/13/12; m. 42, c. 2. B.T.C, Lowell Textile Inst, 34; M.S, Notre Dame, 37, Ph.D, 39. Dupont Co, 39-.

THOMAS, Robert M(elvin), *Organic chemistry*. Lima, O, 3/17/16; m. 39, c. 2. A.B, DePauw, 38; M.S, Purdue, 40; Ph.D, 42. Mich. Chem. Corp, 47-.

THOMAS, R(oyle) P(rice), *Agronomy, Soils*. Sullivan, Ind, 9/26/97; m. 23, c. 1. B.S, Illinois, 19; M.S, Iowa State Col, 25; Ph.D, Wisconsin, 28. Maryland, 28-, prof, 35-.

THOMAS, Samuel Owen, *Botany*. Lagrange Co, Ind, 9/5/01; m. 44. B.S, Wittenberg Col, 34; B.S, Goshen Col, 34; M.S, Purdue, 40, Ph.D, 46. Am. Cyanamid Co, Lederle Labs, res. mycol, 43-.

THOMAS, T(racy) Y(erkes), *Mathematics* (starred). Alton, Ill, 1/8/99; m. 29, c. 1. A.B, Rice Inst, 21; A.M, Princeton, 22, Ph.D, 23. Princeton, 23-38, assoc. prof, 31-38; Calif, prof, 38-44; Indiana, prof, ch, 44-. Natl. Acad. Sci. Geometry, relativity.

THOMPSON, A(lton) H(oward), *Anthropology*. Logansport, Ind, 4/8/49, died, 14. D.D.S, Phila. Dental Col, 72. Kansas City Dental Col, prof, 80-14.

THOMPSON, Alva, *Organic chemistry*. Ridgefarm, Ill, 6/23/05; m. 30. B.A, Wabash Col, 27; M.A, Ohio State, 29, Ph.D, 31. Ohio State, res. found, 44-.

THOMPSON, Charles Frederick, *Orthopedic surgery*. Attica, Ind, 1/31/95; m. 25, c. 3. B.S, Indiana, 21, M.D, 24. Indiana, assoc. prof, 40-.

THOMPSON, David H(iram), *Zoology*. Dayton, Ind, 2/27/97. B.S, Purdue, 19; M.S, Illinois, 21, Ph.D, 24. Ill. Nat. Hist. Surv, 23-, in chg. fisheries res, 26-.

THOMPSON, Geo(rge) E(llsworth), *Physics*. Warren, Ind, 4/2/87, died, 31. A.B, Indiana, 09, A.M, 10; Ph.D, Cornell, 13. Iowa State Col, assoc. prof, 14-31.

THOMPSON, H(enry) Loren, *Civil engineering*. Vigo Co, Ind, 3/2/12, m. 37. B.S, Rose Poly. Inst, 34; M.S, Mich. State Col, 40. Northwestern, asst. prof, 42-45.

THOMPSON, Herman O., *Pharmacy*. Earl Park, Ind, 1/21/11; m. 38, c. 2. B.S.Phar, North Carolina, 37; M.S, Purdue, 40, Ph.D, 44. Eli Lilly & Co, 38-39; North Carolina, assoc. prof, 46-.

THOMPSON, J(ohn) M(urray), *Agricultural economics*. Kokomo, Ind, 12/22/02; m. 26, c. 5. A.B, DePauw, 25; M.S, Lehigh, 29; Ph.D, California, 35. Purdue, instr, 29-32; U. S. Dept. Agr, 37-.

THOMPSON, Lee P(rice), *Mechanics*. Pastura, N. Mex, 6/29/13; m. 36, c. 4. B.A, Indiana, 36; M.S, A. & M. Col. (Tex.), 38, Ph.D, 49. A. & M. Col, 38-, prof. 48-.

THOMPSON, Lewis Ryers. *Surgery*. Lafayette. Ind. 8/6/83; m. 08, c. 2. M.D, Louisville, 05. U. S. Pub. Health Serv, 10-47; asst. surg. gen, 42-45.

THOMPSON, Louis T(en) E(yck), *Physics*. South Haven, Mich, 10/24/91. B.S, Kalamazoo Col, 14; A.M, Clark, 15, Ph.D, 17. Carl L. Norden, Inc. (Indianapolis), dir. res, 42-.

THOMPSON, Randall L(eslie), *Bacteriology*. Utica, Mo, 10/22/05; m. 34, c. 1. S.B, Washington (Seattle), 27, M.S, 28; Sc.D, Hopkins, 31; M.D, Chicago, 40. Indiana, prof, 47-.

THOMPSON, R(obert) W(alder), *Physics*. Minneapolis, Minn, 12/28/19; m. 48. B.Phys, Minnesota, 41; Ph.D, Mass. Inst. Tech, 48. Indiana, asst. prof, 48-.

THOMPSON, Thomas R(obert), *Organic chemistry*. Chicago, Ill, 1/16/14; m. 40, c. 1. B.S, Purdue, 37; A.M, Temple, 39; Ph.D, Texas, 42. Gen. Aniline & Film Corp, Ansco div, 42-.

THOMPSON, William Benbow, *Obstetrics*. Monrovia, Ind, 12/26/90; m. 16, c. 3. A.B, South. California, 12; M.S, California, 14, M.D, 16. South. California, assoc. clin. prof, 43-.

THOMS, Richard K., *Pharmacology*. Indianapolis, Ind, 12/16/21; m. 45, c. 1. B.S, Purdue, 43, M.S, 46, Ph.D, 48. N. Dak. Col, prof, 49-.

THOMSON, John F(erguson), *Pharmacology*. Garrett, Ind, 4/18/20, m. 43, c. 1. S.B, Chicago, 41, S.M, 42, Ph.D, 47. Chicago, 47-.

THORN, Sister M. Doloretta, *Chemistry*. Clearfield, Pa, 10/16/85. B.S, Canisius Col, 26; M.S, Notre Dame, 31, Ph.D, 36. Villa Maria Col, 26-, prof, 31-.

THORNBURG, M(artin) L(ynn), *Mechanical engineering*. Monon, Ind, 6/25/92; m. 18, c. 2. B.S, Purdue, 15, M.E, 22. Purdue, instr. to asst. prof, 19-24; Arizona, prof, 24-.

THORNBURG, Paul Marcellus, *Engineering*. Monticello, Ind, 7/26/01; m. 25, 45, c. 2. B.S, Purdue, 24, M.E, 29. Arizona, prof, 27-.

THORNBURY, William David, *Glacial geology and geomorphology*. English, Ind, 4/23/00; m. 28, c. 1. A.B, Indiana, 25, Ph.D, 36; A.M, Colorado, 28. Ind. high schs, 19-22; Indiana, 28-, assoc. prof, 43-.

THORNTON, G(eorge) R(ussell), *Social psychology*. Adrian, Minn, 11/12/08. A.B, Morningside Col, 30; A.M, Nebraska, 35, Ph.D, 38. Purdue, asst. prof, 39-.

THORNTON, Max Horsley, *Biochemistry*. Lockhart, S.C, 3/11/01; m. 29, c. 2. B.S. Clemson Col, 21; M.S, Purdue. 31, Ph.D, 37. Purdue, 23-36; U. S. Dept. Agr, 36-45; Midwest Res. Inst, 45-, chm. chem. div, 49-.

THORNTON, Samuel Farrar, *Soils, Fertilizers, Chemistry.* Lockhart, S. C, 4/26/95; m. 21, c. 2. B.S, Clemson Col, 16; M.S, Purdue, 30, Ph.D, 35. Calumet Fertilizer Co. (Ind.), 21-24; Paul Smith Lab. (Indianapolis), 24-27; Purdue, exp. sta, 17-20, 27-38, soil chem, 36-38; F. S. Royster Guano Co, 38-.

THORP, James, *Soils.* Westtown, Pa, 1/12/96; m. 23. B.S, Earlham Col, 21. U. S. Dept. Agr, soil surveyor, 21-33; China, ch. soil technol, 33-36; U. S. Dept. Agr, 36-, prin. soil correlator, Great Plains States, 42-; Nebraska, prof. soils, 42-.

THRUN, Walter E(ugene), *Chemistry.* Bloomfield, Wis, 3/22/92; m. 23, c. 2. A.B, Michigan, 12, M.S, 14; Ph.D, Missouri, 17. Valparaiso, 28-, prof, 39-.

THURBER, C(larence) H(owe), *Education.* Brattleboro, Vt, 9/19/88; m. 13, c. 3. A.B, Colgate, 12; A.M, Columbia, 21, Ph.D, 22. Wabash Col, prof, 13-15; Purdue, prof, 15-20; Redlands, pres, 33-38.

TIDD, George W(ashington), *Engineering.* Wakefield, O, 9/28/73. B.S, Valparaiso, 98; M.S, Iowa, 11. Missouri, 43-.

TIESZEN, Derk V(ivien), *Chemistry.* Marion, S. Dak, 10/19/98; m. 29. A.B, Yankton Col, 24; M.A, Colorado, 31; Ph.D, Ohio State, 45. Goshen Col, prof, 28-30; N. Y. State Col. Teachers, 31-.

TIFFIN, Joseph (Harold), *Psychology.* Falls City, Nebr, 7/4/05; m. 27, c. 2. B.A, South Dakota, 27; M.A, Iowa, 28, Ph.D, 30. Purdue, 38-, prof, 40-.

TILT, Jennie, *Nutrition.* West Lafayette, Ind, 10/25/86. B.S, Purdue, 07, M.S, 10; Ph.D, Chicago, 23. Fla. State Col. Women, 23-47, prof, 33-47; Fla. State U, 47-.

TIMMONS, George D., *Pharmaceutical chemistry.* Warren Co, Ind, 8/10/67, died, 18. Grad, Valparaiso, 97. Valparaiso, 98-18, prof, 09-12, dean sch. phar, 12-18.

TINDALL, John Bascom, *Chemistry.* Indianapolis, Ind, 2/13/03; m. 25, c. 4. B.S, Purdue, 25, M.S, 27. Three B Co. (Ind.), 29-31; Commercial Solvents Corp. (Ind.), 31-.

TINKLE, William J(ohn), *Biology.* Marion, Ind, 11/20/92; m. 16, c. 2. A.B, Manchester Col, 16; M.A, Ohio State, 27, Ph.D, 32. Ind. high schs, 24-26; Taylor, prof, 33-.

TINNAPPEL, Harold E(llsworth), *Mathematics.* Columbus, O, 5/12/18. B.Sc, Ohio State, 40, M.A, 46. Ind. Tech. Col, 40-43; Ohio State, instr, 47-.

TIPPETTS, Emerson A(dair), *Chemistry.* Lake Shore, Ut, 2/27/08; m. 30, c. 1. B.S, Utah, 30; M.S, Purdue, 32, Ph.D, 34. Dupont Co, rayon dept, 35-, res. mgr, 42-46, asst. dir, 46-.

TISDALE, Samuel Luther, *Soil chemistry.* Tampa, Fla, 7/2/18; m. 43. B.S, Ala. Poly. Inst, 42; Ph.D, Purdue, 49. N. C. State Col, asst. prof, 49-.

TODD, J(ohn) W(elhoff), *Psychology.* Aurora, Ind, 11/20/80. A.B, Indiana, 05, A.M, 10; Ph.D, Columbia, 12. South. California, prof, 20-.

TODD, Leslie J(ay), *Chemistry.* Hendrysburg, O, 9/17/00; m. 26, c. 2. A.B, Muskingum Col, 24; Columbia, 28, Ph.D, 31. Indiana, assoc. prof, 46-49; Kent State, 49-.

TOLAND, William G(ridley), Jr, *Organic chemistry.* Springfield, Mass, 11/29/17; m. 39, c. 2. B.S, Antioch Col, 40; M.S, Purdue, 41, Ph.D, 44. Calif. Res. Corp, 44-.

TOLLEY, Howard Ross, *Agricultural economics.* Howard Co, Ind, 9/30/89; m. 12, c. 3. A.B, Indiana, 10. Ind. high schs, 10-11; U. S. Dept. Agr, 15-46, Bur. Agr. Econ, ch, 38-46; United Nations Food and Agr. Org, ch, 46-.

TOLMAN, Ruth S(herman), *Psychology.* Washington, Ind, 10/10/93; m. 24. A.B, California, 17, Ph.D, 37; M.A, Occidental Col, 31. Veterans Admin, 46-.

TOMES, Mark L(ouis), *Genetics.* Ft. Wayne, Ind, 11/15/17; m. 44, c. 1. A.B, Indiana, 39; M.S, A. & M. Col. (Tex.), 41. Stokeley-Van Camp, Inc. (Indianapolis), res, 46-48; Purdue, exp. sta, 48-.

TONER, Richard K(enneth), *Chemical engineering.* Terre Haute, Ind, 1/9/13; m. 37, c. 1. B.S, Rose Poly. Inst, 34; M.S, Purdue, 36, Ph.D, 39. Princeton, 42-, assoc. prof, 48-.

TOOLE, Eben H(enry), *Botany.* Baraboo, Wis, 1/6/89. A.B, Wisconsin, 15, A.M, 16, Ph.D, 20. Purdue, asst. prof, 17-19; U. S. Dept. Agr, 20-, physiol, seed invests, 31-.

TOPEL, B(ernard) J(oseph), *Mathematics.* Bozeman, Mont, 5/31/03. A.B, Mt. St. Charles Col, 23; S.T.B, Catholic, 26, A.M, 27; A.M, Harvard, 34; Ph.D, Notre Dame, 38. Notre Dame, prof, 38-39; Carroll Col, 39-.

TOPPER, Robert C(arlton), *Psychology.* Wayne Co, O, 9/8/15; m. 37, c. 2. B.S, Ashland Col, 36; M.A, Ohio State, 37; Ph.D, Indiana, 47. Veterans Admin. Hosp. (Tuscaloosa), ch. clin. psychol. serv, 48-.

TORDELLA, John P., *Chemistry.* Garrett, Ind, 5/24/19; m. 43, c. 3. B.S, Loyola (Ill.), 41; M.S, Illinois, 42, Ph.D, 44. Dupont Co. Exp. Sta, 46-.

TORDELLA, Louis W(illiam), *Mathematics.* Garrett, Ind, 5/1/11; m. 43, c. 2. B.S, Loyola (Ill.), 33, A.M, 35; Ph.D, Illinois, 39. U. S. Navy Dept, Ch. Naval Operations, math, 46-.

TORREY, Theodore W(illett), *Zoology.* Woodbine, Ia, 1/14/07; m. 38. A.B, Denver, 27; A.M, Harvard, 29, Ph.D, 32. Indiana, 32-, prof, 47-.

TOTH, Louis A(ndrew), *Physiology.* South Bend, Ind, 8/23/09; m. 38, c. 2. A.B, Kentucky, 31, M.S, 32; Ph.D, Rochester, 36. Louisiana, 46-, assoc. prof, 47-.

TOULOUKIAN, Y(eram) S(arkis), *Heat transfer.* Istanbul, Turkey, 12/28/20. B.S, Robert Col, 39; M.S, Mass. Inst. Tech, 41; Ph.D, Purdue, 46. Purdue, 44-, asst. prof, 47-.

TOUSSAINT, Norbert F., *Chemistry.* Utica, N. Y, 12/2/12; m. 40, c. 4. B. Ch.E, Notre Dame, 35, Ph.D, 40; M.S, Pa. State Col, 36. Dupont Co, 40-45.

TOUSSAINT, Walter Julius, *Organic chemistry.* Utica, N. Y, 1/12/07; m. 34, c. 5. B.S, Notre Dame, 28, M.S, 29. Carbide & Carbon Chems. Corp. (W. Va.), 29-, proj. super, 40-.

TOWLE, Phillip H(amilton), *Organic chemistry.* San Francisco, Calif, 8/11/18. A.B, Stanford, 40; Ph.D, Mass. Inst. Tech, 48. Standard Oil Co. Ind, 48-.

TRABANT, E(dward) A(rthur), *Mathematics.* Los Angeles, Calif, 2/28/19; m. 43, c. 1. A.B, Occidental Col, 40; Ph.D, Calif. Inst. Tech, 47. Purdue, instr, 46-.

TRABUE, M(arion) R(ex), *Psychology, Education.* Kokomo, Ind, 4/30/90; m. 13, c. 2. A.B, Northwestern, 11; A.M, Columbia, 14, Ph.D, 15. North Carolina, prof, 22-37; Pa. State Col, dean sch. educ, 37-.

TRAGER, Earl A(dam), *Geology.* South Bend, Ind, 6/17/93; m. 2nd, 32; c. 2. S.B, Chicago, 17. Natl. Park Serv, ch, nat. div, 32-40.

TREADWAY, Robert Holland, *General and physical chemistry.* Bloomington, Ind, 11/10/10; m. 38, c. 1. A.B, Indiana, 32, A.M, 34, Ph.D, 36. Dupont Co, 36-40; U. S. Dept. Agr, 41-.

TRENT, Horace Maynard, *Physics.* Chattanooga, Tenn, 12/20/07; m. 33, c. 2. B.A, Berea Col, 28; M.A, Indiana, 29, Ph.D, 34. Naval Res. Lab, 41-, phys, 43-.

TREON, J(oseph) F(rederick), *Chemistry.* Aurora, Ind, 4/12/08; m. 35, c. 1. A.B, Indiana, 30; M.A, Cincinnati, 32, Ph.D, 35. Cincinnati, Kettering Lab, 36-, asst. prof. toxicol, 48-.

TREXLER, Philip Charles, *Bacteriology.* Paradise, Calif, 7/30/11; m. 41. B.S, Notre Dame, 34, M.S, 36. Notre Dame, 36-, asst. prof, 42-46, assoc. res. prof, 46-.

TRIPP, John T(heodore), *Biochemistry.* White Lake, S. Dak, 1/25/03. B.S, S. Dak. State Col, 24, M.S, 31; Ph.D, Purdue, 36. State Dept. Health, Mich, 35-.

TRIPP, M(yron) O(wen), *Mathematics.* Grand Haven, Mich, 3/19/74. B.S, Valparaiso, 95; A.B, Indiana, 01; Ph.D, Columbia, 09. Wittenberg Col, prof, 21-38.

TROIANO, Alexander R(obert), *Physical metallurgy.* Boston, Mass, 9/5/08; m. 38, c. 2. A.B, Harvard, 31, Sc.D, 39. Notre Dame, assoc. prof. to prof, 39-.

TROOP, James, *Entomology.* Bennington, N. Y, 3/14/53, died, 41. B.S, Mich. Agr. Col, 78, M.S, 82. Purdue, 84-20, entom, 12-20; state entom, Ind, 99-07. Did much during 57 years at Purdue for Indiana fruit trees.

TROST, John F(rancis), *Plant pathology.* Indianapolis, Ind, 5/30/97. B.S.A, Purdue, 18, M.S, 22. U. S. Dept. Agr, 18-, assoc. and later plant, path, 24-.

TRUCE, William E(verett), *Chemistry.* Chicago, Ill, 9/30/17; m. 40, c. 2. B.S, Illinois, 39; Ph.D, Northwestern, 43. Wabash Col, 43-44; Purdue, asst. prof, 46-.

TRUE, N(athan) F(rank), *Chemistry.* Freeport, Me, 10/3/96. A.B, Maine, 20. Mead Johnson & Co. (Evansville), 23-.

TRUEBLOOD, H(oward) M(offitt), *Thermodynamics.* Richmond, Ind, 4/16/84; m. 14, c. 3. B.S, Earlham Col, 02; Ph.D, Harvard, 13. Am. Tel. & Tel, 17-49.

TRUEBLOOD, Lester Wendell, *Geography.* Loogootee, Ind, 8/6/11; m. 39, c. 3. B.S, Ind. State Teachers Col, 33; M.A, Clark, 36. Judson Col. (Burma), 36-41; U. S. War Dept. Dept. Army, geog, 46-.

TRUEBLOOD, Mary Esther, *Mathematics.* Richmond, Ind, 5/6/72. Ph.B, Earlham Col, 93; Ph.M, Michigan, 96. Earlham, 97-99; Mt. Holyoke Col, 02-.

TRUMAN, Lee C(ampbell), *Invertebrate zoology.* Butler, Pa, 4/9/14; m. 39, c. 1. B.S, Pittsburgh, 36, Ph.D, 41. Arab Pest Control Co. & Fed. Chem. Co. (Indianapolis), 47-.

TUCKER, David A(ndrew), Jr, *Internal medicine.* Greensburg, Ind, 12/21/90; m. 25, c. 2. A.B, Parker Col, 09; A.M, Michigan, 14; M.D, Cincinnati, 16. Cincinnati, 14-, assoc. prof, 17-35, prof. hist. med, 35-.

TUCKER, Elton B(rink), *Chemical engineering.* Otsego, Mich, 6/14/01; m. 30, c. 2. B.S, Michigan, 22; A.M, Columbia, 23, Ph.D, 28. Standard Oil Co. Ind, 31-, res. chem, 32-35, leader, 36-.

TUCKER, Forrest G(lenn), *Physics.* Georgetown, Ind, 7/3/92; m. 21, c. 3. A.B, Indiana, 14, A.M, 16; Ph.D, Chicago, 22. Oberlin Col, prof, 26-.

TUCKER, W(illiam) Henry, *Chemical engineering.* Seaford, Del, 7/7/20; m. 43, c. 1. B.Ch.E, Virginia, 42; S.M, Mass. Inst. Tech, 46, Sc.D, 47. Servel Inc. (Evansville), 47-.

TUCKER, W(illiam) M(otier), *Geology.* Holton, Ind, 11/18/77; m. 16. A.B, Indiana, 08, A.M, 09, Ph.D, 16. Indiana, 20-27, assoc. prof, 23-27; state hydrol, Ind, 20-28; Fresno State Col, prof, 27-40. Indiana lake bottoms.

TUGMAN, Orin, *Physics.* Rockville, Ind, 5/26/80; m. 12, c. 2. A.B, Indiana, 03, A.M, 06; Ph.D, Cornell, 09. Purdue, instr, 03-06; Utah, 15-46, prof, 19-28, head dept, 28-46.

TURNER, B(enjamin) B(ernard), *Pharmacology.* Hongkong, China, 2/6/71. B.S, London, 94; Ph.D, Gottingen, 99. Indiana, 15-, prof, 17-.

TURNER, Clarence M(arshall), *Physics.* Economy, Ind, 8/14/11; m. 42, c. 2. A.B, DePauw, 37; Ph.D, Wisconsin, 43. California, res, 45-.

TURNER, H(oward) E(lliott), *Chemical engineering.* Evanston, Ill, 4/16/16; m. 40, c. 2. B.Ch.E, Minnesota, 38, M.S, 40. Dupont Co, 40-, super, East Chicago, Ind, plant, 43-.

TURNER, William Payson, *Mechanical engineering.* Iesl au Haut, Me, 8/2/67, died, 40. B.S, Mass. Inst. Tech, 84. At Purdue, 86-38—52 years.

TUSSING, Lyle, *Psychology.* Clinton, Ia, 3/20/11; m, c. 1. B.S, Dakota Wesleyan, 36; M.S, Purdue, 37, Ph.D, 41. Burbank City Schs. (Calif.), dir. res, 44-47; El Camino Col, 47-.

TUSSON, John R(obert), *Chemical engineering.* Gretna, La, 12/18/20. B.E, Tulane, 42; M.S.E, Princeton, 47. Standard Oil Co. Ind, 47-.

TWEEDY, Wilbur R., *Biological chemistry.* Boonville, Ind, 1/23/90; m. 18. A.B, Indiana, 16; Ph.D, Chicago, 26. Loyola (Ill.), 25-48, prof, 36-48; Veterans Admin. Hosp. (Ill.), Radioisotope Unit, 48-.

TWITTY, Victor C(handler), *Zoology* (starred), *Embryology.* Shoals, Ind, 11/5/01; m. 34, c. 4. B.S, Butler, 25; Ph.D, Yale, 29. Stanford, 32-, prof, 36-.

UHL, Arthur H(oyt), *Chemistry.* Galesville, Wis, 7/31/00. B.S, Wisconsin, 25, M.S, 26, Ph.D, 30. Valparaiso, 27-29, asst. prof, 28-29; Wisconsin, 29-, res. phar, 30-, dir, res. phar, 36-.

ULLSTRUP, Arnold J(ohn), *Plant pathology.* Milwaukee, Wis, 1/24/07; m. 34, c. 2. B.S, Wisconsin, 31, M.S, 32, Ph.D, 34. Purdue, U. S. Dept. Agr, 38-.

ULMER, Gilbert, *Mathematics.* Alexandria, Ind, 10/27/03; m. 37, c. 4. A.B, Butler, 31; A.M, Kansas, 33, Ph.D, 39. Kansas, 34-, assoc. prof, 44-.

ULREY, Albert B(rennus), *Biology.* North Manchester, Ind, 12/31/60, died, 32. A.B, Indiana, 92, A.M, 94. Indiana, instr, 92-94; Manchester Col, prof, 95-99; South. California, 01-30.

ULREY, Clayton T(ridle), *Physics.* North Manchester, Ind, 9/19/84. A.B, Indiana, 11; A.M, Maine, 13; Ph.D, Columbia, 18. Westinghouse Lamp Co, res, 20-34; consult, 34-.

ULREY, Dayton, *Physics.* North Manchester, Ind, 9/19/84; m. 12, c. 5. A.B, Indiana, 11, A.M, 12; Ph.D, Stanford, 17. Westinghouse Elec. & Mfg. Co, 18-42; Radio Corp. Am, RCA Victor Div, 42-.

ULRICH, Edward Alan, *Chemical engineering.* Louisville, Ky, 1/19/10; m. 38, c. 3. B.S, Purdue, 31. S. F. Bowser, Inc. (Ft. Wayne), 35-39; Niagara Filter Corp, 43-.

ULRICH, H(erbert) P(aul), *Agronomy, Soil science.* Penbrook, Pa, 10/20/04; m. 29, c. 1. B.S, Pa. State Col, 26. Purdue, soil surv, 26-46, asst. prof, 46-.

UNDERWOOD, Julius Erwin, *Chemistry.* Noblesville, Ind, 5/11/89; m. 16, c. 2. A.B, Wabash Col, 11, M.A, 12. Pa. Salt Mfg. Co, mgr. res, 28-42; Diamond Alkali Co, dir. res, 44-.

UNDERWOOD, Lucien M(arcus), *Botany* (starred). New Woodstock, N. Y, 10/26/53, died, 07; m. 81. Ph.D, Syracuse, 77. DePauw, prof, 91-95; Columbia, prof, 96-07. Plant taxonomy.

UNDERWOOD, Ralph Sylvester, *Mathematics.* Anoka, Minn, 10/3/91; m. 30. B.A, Minnesota, 16, M.A, 17; Ph.D, Chicago, 30. Purdue, instr, 19-22; Texas Tech. Col, 27-, prof, 30-.

UNNEWEHR, Emory Carl, *Physics.* Batesville, Ind, 11/9/85; m. 20. B.S, Purdue, 09; Ph.D, Columbia, 24. Baldwin-Wallace Col, prof, 12-.

UPTON, Morgan, *Physiology, Psychology.* Princeton, Ind, 8/5/98; m. 37, c. 4. S.B, Washington (Seattle), 22; A.M, Harvard, 27, Ph.D, 28. Rutgers, prof, 47-.

UREY, Harold C(layton), *Chemistry* (starred). Walkerton, Ind, 4/29/93; m. 26, c. 4. B.S, Montana, 17; Ph.D, California, 23. Columbia, 29-45, prof, 34-45; Chicago, dist. serv. prof, 45-. Nobel prize, 34; Natl. Acad. Sci. Heavy water; atomic research; age of rocks.

URNER, Samuel Everett, *Mathematics.* Mitchell, Ind, 7/29/87; m. 08, c. 5. Ph.B, Baker, 06; Ph.D, Harvard, 11. Miami (O.), 11-19, assoc. prof, 18-19; Los Angeles City Col, 31-, prof, 46-.

USSELMAN, George Lindley, *Electrical engineering.* Sylvania, Ind, 11/27/88; m. 21, c. 4. B.S, Kans. State Col, 16. Radio Corp. Am. (N. Y.), 20-, radio res, 25-.

UTTERBACK, C(linton) L(ouis), *Physics*. Cloverdale, Ind, 2/2/85; m. 19, c. 1. B.S, Purdue, 08; M.S, Washington (Seattle), 18; Ph.D, Wisconsin, 25. Washington (Seattle), 27-, prof, 34-.

UTTERBACK, W(illiam) I(rvin), *Zoology*. Crawfordsville, Ind, 10/11/72, died, 49. B.S, Wabash Col, 01; A.M, Missouri, 15. Marshall Col, prof, 19-40.

VAILE, J(oseph) E(dwin), *Horticulture, Forestry*. Kokomo, Ind, 1/13/02; m. 30. B.S, Illinois, 28, M.S, 29, Ph.D, 33. Arkansas, 36-, assoc. prof, 43-.

VAN ABEELE, F(rederick) R(ichard), *Biochemistry*. Chicago, Ill, 10/19/16; m, c. 2. B.S, Purdue, 39; Ph.D, Illinois, 48. Eli Lilly & Co, 40-.

VANARENDONK, Arthur M(arion), *Chemistry*. Grand Haven, Mich, 7/25/08; m. 37, c. 1. A.B, Hope Col, 30; Ph.D, Illinois, 34; J.D, Indiana, 47. Eli Lilly & Co, res. chem, 34-44, patent counsel, 47-.

VAN ARSDEL, W(allace) B(arnes), *Chemical engineering*. Frankfort, Ind, 3/17/93; m. 1, c. 2. B.S, Purdue, 13. U. S. Dept. Agr, 37-, West. Regional Res. Lab, 40-, asst. dir, 47-.

VANCE, Arlo M(cCrillis), *Entomology*. Wheelock, Vt, 9/5/99; m. 28, c. 1. B.S, New Hampshire, 22; M.S, Virginia, 25. U. S. Dept. Agr. and Purdue, 22-. Corn borer.

VANCE, Charles B(lount), *Physics*. Hillsboro, O, 85; m. 17, c. 1. B.S, Denison, 12; M.S, Ohio State, 23; Ph.D, Indiana, 31. J. B. Stetson, 31-42; Evansville Col, prof, 42-45.

VANDERBILT, Byron M., *Organic chemistry*. Brookston, Ind, 3/21/06. A.B, Indiana, 29; M.S, Purdue, 31, Ph.D, 37. Commercial Solvents Corp. (Terre Haute), 36-38.

VANDERKLEED, Charles E(dwin), *Chemistry*. Lafayette, Ind, 4/24/78; m. 01, 39, c. 1. Ph.G, Purdue, 95, Ph.C, 96, B.S, 99, A.C, 01. Purdue, instr, 96-01; H. K. Mulford Co. (Phila.), 02-17; McNeil Co. (Phila.), 20-48, v. p, McNeil Labs, 33-48; retired.

VAN DOREN, Lloyd, *Chemistry*. Oldwick, N. J, 12/11/89. B.S, Gettysburg Col, 09, M.S, 13; Ph.D, Hopkins, 12. Earlham Col, prof, 14-19; Watson, Bristol, Johnson & Leavenworth, 31-.

VAN DUSEN, Clarence Raymond, *Speech pathology*. Elkhart, Ind, 11/9/07; m. 41. A.B, Indiana, 31; M.A, Michigan, 32, D.Sc, 37. Miami (Fla.), 46-, prof, 47-.

VAN DYKE, Geo(rge) D(ewey), *Physics*. Greenup, Ill, 2/27/98. A.B, Park Col, 20; M.S, Iowa, 22; Ph.D, Michigan, 26. Earlham Col, prof, 30-.

VAN FLEET, D(ick) S(cott), *Botany*. Trenton, N. J, 3/23/12; m, c. 2. A.B, Indiana, 36, M.A, 37, Ph.D, 40. Missouri, 44-, assoc. prof, 47-.

VAN HEYNINGEN, Earle Marvin, *Organic chemistry*. Chicago, Ill, 10/15/21. A.B, Calvin Col, 43; Ph.D, Illinois, 46. Eli Lilly & Co, 46-.

VAN HOOK, J(ames) M., *Plant pathology, Mycology*. Washington Co, Ind, 12/19/70, died, 35. A.B, Indiana, 99, A.M, 00. Indiana, 07-35, prof, 25-35.

VAN HOY, Charles E(dward), *Chemistry*. Shoals, Ind, 7/6/18; m. B.S, Indiana, 40. Magnavox Co. (Ft. Wayne), 40-.

VAN HUYSEN, G(rant), *Oral diagnosis*. Schenectady Co, N. Y, 3/10/02. D.D.S, Pennsylvania, 25. Indiana, prof, 42-.

VAN KOOTEN, Edward H(erbert), *Chemistry*. Alexandria, Va, 10/10/93. A.B, Indiana, 35, M.A, 36, Ph.D, 38. U. S. Ordnance Dept. (Ind.), 41-45; Los Alamos res. lab, California, 47-.

VAN LEER, Blake R(agsdale), *Hydraulics*. Mangum, Okla, 8/16/93; m. 24, c. 3. B.S, Purdue, 15, M.E, 22; M.S, California, 20. California, 15-28, asst. prof, 20-28; Florida, dean eng, 32-37; North Carolina, 37-44; Ga. Inst. Tech, pres, 44-.

VAN STRIEN, Richard E(dward), *Chemistry*. Battle Creek, Mich, 9/17/20; m. 42, c. 1. A.B, Hope Col, 42; M.S, Pennsylvania, 44, Ph.D, 48. Standard Oil Co. Ind, 47-.

VAN WINKLE, M(atthew), *Chemical engineering*. Shelbyville, Ind, 11/18/10; m. 33, c. 2. B.S, Purdue, 33; M.S, Michigan, 45. Standard Oil Co. Ind, 40-41; Michigan, 43-47; Texas, assoc. prof, 47-.

VARNES, David J(oseph), *Geology*. Howe, Ind, 4/5/19; m. 43, c. 1. B.S, Calif. Inst. Tech, 40. U. S. Geol. Surv, 41-.

VARY, Karl A., *Agricultural economics*. Covert, Mich, 2/1/15; m. 44, c. 2. B.S, Mich. State Col, 44, M.S, 45; Ph.D, Purdue, 47. Mich. State Col, asst. prof, 48-.

VAUGHAN, A(lfred) L(eland), *Physics*. Veedersburg, Ind, 9/3/06; m. 33, c. 2. B.A, DePauw, 29; Ph.D, Minnesota, 34. Minnesota, 35-, prof, 47-.

VAUGHN, Thomas H(unt), *Organic chemistry*. Clay, Ky, 11/11/09; m. 30, c. 3. B.S, Notre Dame, 31, M.S, 32, Ph.D, 34. Wyandotte Chems. Corp, 43-, v. p, 48-.

VEATCH, A(rthur) C(lifford), *Geology*. Evansville, Ind, 10/26/78, died, 38. Ind. high schs. Rockport, 96-97; U. S. Geol. Surv, 02-10; S. Pearson & Son, foreign dept, 12-19; Sinclair Cons. Oil Co, exploration dept, 19-38. Organizer and first chm, Land Classification Bd, U. S. Geol. Surv, 08-10.

VENEMANN, H. G(erald), *Refrigeration.* Avon, Mass, 3/3/84. Purdue, 03-06; B.S, Colorado, 07. Purdue, assoc. prof, 29-.

VERAGUTH, A(rnold) J(ohn), *Chemistry.* Winona, Minn, 3/23/15; m. 43, c. 2. A.B, Wabash Col, 37; M.S, Purdue, 39; Ph.D, Illinois, 43. Lubrizol Corp, 46-.

VERBANC, John J(oseph), *Organic chemistry.* New Brighton, Pa, 11/30/13; m. 41, c. 3. B.S, Notre Dame, 35, M.S, 36, Ph.D, 38. Dupont Co, 38-, group leader, 46-.

VERPLANCK, William S(amuel), *Psychology.* Plainfield, N. J, 1/6/16. B.S, Virginia, 37, M.A, 38; Ph.D, Brown, 41. Indiana, asst. prof, 46-.

VESTAL, C(laude) M., *Animal husbandry.* Montezuma, Ind, 2/25/83; m. 14, c. 1. B.S.A, Purdue, 11. Purdue, exp. sta, assoc. prof, 18-.

VESTAL, Edgar F(red), *Botany, Agriculture.* Ashland, Ore, 9/5/90. B.S, Ore. State Col, 16; M.S, Wisconsin, 23; Ph.D, Iowa State Col, 32. Franklin Col, prof, 27-29; Ark. State Col, prof. agr, 42-.

VIBRANS, Frank C(harles), *Chemistry.* Cokeville, Wyo, 3/15/90; m. 18, c. 1. A.B, Wabash Col, 13; Ph.D, Michigan, 17. Am. Meat Inst, ch. res. chem, 29-.

VILLARS, D(onald) S(tatler), *Physical chemistry.* Blanchester, O, 12/21/00; m. 26, c. 2. A.B, Wilmington Col, 21; M.Sc, Ohio State, 22, Ph.D, 24. Standard Oil Co. Ind, 31-34; U. S. Naval Ordnance Test Sta, 49-.

VINCENT, Hugh C(arlson), *Pharmacy.* Irvington, Nebr, 5/26/09; m. 38, c. 1. Ph.C, State Col. Wash, 30, B.S, 31, M.S, 34; Ph.D, Purdue, 44. Abbott Labs, 46-.

VIOHL, Paul, *Organic chemistry.* Charleston, S. C, 12/12/13; m. 40, c. 2. B.S, Col. Charleston, 35; Ph.D, Hopkins, 39. U. S. Rubber Co. (Ft. Wayne), 39-, asst. develop. mgr, 46-.

VIOL, Charles H(erman), *Chemistry.* Lafayette, Ind, 5/21/86, died, 28. B.S, Purdue, 07; Ph.D, Chicago, 12. Standard Chem. Co, 12-28, dir. radium res. lab, 13-28.

VISHER, Stephen S(argent), *Geography.* Chicago, Ill, 12/15/87; m. 14, c. 4. S.B, Chicago, 09, M.S, 10, Ph.D, 14; M.A, South Dakota, 12. Indiana, asst. prof. to prof, 19-. Ind. Acad. Sci. (pres, 50). Numerous papers on Indiana's climate, agriculture, soil erosion, population and leaders.

VISSCHER, Frank E(vert), *Biochemistry.* Holland, Mich, 5/9/12; m. 40, c. 2. A.B, Hope Col, 34; M.S, Purdue, 36, Ph.D, 41. Upjohn Co, res, 45-.

VITTUM, M(orrill) T(hayer), *Agronomy.* Haverhill, Mass, 5/4/19; m. 41, c. 2. B.S, Massachusetts, 39; M.S, Connecticut, 41; Ph.D, Purdue, 44. Purdue, soils, 42-45; N. Y. Exp. Sta, 46-.

VOEGELIN, C(harles) F(rederick), *Anthropology.* N. Y. C, 1/14/06; m. 31, c. 1. B.A, Stanford, 27; Ph.D, California, 32. DePauw, 36-41, assoc. prof, 39-41; Indiana, 41-, prof, 47-.

VOEGELIN, Erminie W(heeler), *Anthropology.* Oakland, Calif, 4/2/03; m, c. 1. A.B, California, 23, M.A, 29, Ph.D, Yale, 39. Indiana, 41-.

VOGEL, Paul W(illiam), *Organic chemistry.* Swayzee, Ind, 10/5/19. A.B, DePauw, 41; Ph.D, Indiana, 46. Lubri-zol Corp, 45-.

VOGEL, Howard H., *Zoology.* N. Y. C, 11/30/14. A.B, Bowdoin Col, 36; A.M, Harvard, 37, Ph.D, 40. Wabash Col, 41-, assoc. prof, 43-.

VOGT, Edward G(eorge), *Chemical engineering.* Detroit, Mich, 3/2/19; m. 41, c. 2. B.S, Tri-State Col, 38; M.S, Michigan, 41, Ph.D, 46. State Col, Wash, asst. prof, 46-.

VOGT, Richard Rockhill, *Organic chemistry.* South Bend, Ind, 5/16/91; m. 21, c. 3. B.S, Notre Dame, 15, M.S, 16, Ph.D, 21. Notre Dame, 21-, assoc. prof, 35-43, dir. res, 43-.

VOLDRICH, C(onstantine) B., *Structural engineering.* Brno, Czechoslovakia, 2/9/09, nat; m. 44, c. 2. B.S, Purdue, 31; M.S, Wisconsin, 33. Battelle Mem. Inst, 41-.

VOLK, N(orman) J(ames), *Soil chemistry.* Oconto Falls, Wis, 1/16/01; m. 28, c. 2. B.S.A, Wisconsin, 23, M.S, 24, Ph.D, 32. Purdue, 44-, assoc. dir. exp. sta, 45-.

VOLKER, Joseph F(rancis), *Biochemistry, Dentistry.* Elizabeth, N. J, 3/9/13; m. 37, c. 2. D.D.S, Indiana, 36; A.B, Rochester, 38, M.S, 39, Ph.D, 42. Alabama, dean, 49-.

VONNEGUT, Bernard, *Physical chemistry.* Indianapolis, Ind, 8/29/14; m. 43, c. 1. B.S, Mass. Inst. Tech, 36, Ph.D, 39. Gen. Elec, 45-.

VON OHLEN, Floyd W(illiam George), *Plant physiology.* Hinckley, Ill, 5/9/96. B.S, Illinois, 20, M.S, 26; Ph.D, Ohio State, 30. Teacher, Francisville, Ind, 41-.

VOORHEES, Vanderveer, *Chemistry.* Alton, Ill, 8/23/96; m. 19, c. 2. B.S, Illinois, 21, M.S, 22; Ph.D, Wisconsin, 24. Standard Oil Co. Ind, 24-, patent adv, 29-.

VORIS, H(arold) C(ornelius), *Neurosurgery.* Pleasant, Ind, 4/18/02; m. 31, c. 4. A.B, Hanover Col, 23; Ph.D, Chicago, 29; M.D, Rush, 30; M.S, Minnesota, 34. Loyola, sch. med, 34-, clin. prof, 36-.

VOS, Bert J(ohn), *Pharmacology.* Bloomington, Ind, 9/18/08; m. 44, c. 2. A.B, Indiana, 30; Ph.D, Chicago, 34; M.D, Rush, 37. Fed. Security Agy, Food & Drug Admin, 39-, asst. ch. div. pharmacol, 47-.

VOSS, Elbert, *Pharmacognosy.* Hector, Ark, 8/31/00; m. 42. B.S, Oklahoma, 28, M.S, 30; Ph.D, Florida, 35. Indianapolis Col. Phar, 30-, head prof, 49-.

VOTAW, Verling Milton, *Chemistry.* Wabash Co, Ind, 3/20/04; m. 26, c. 4. A.B, Indiana, 25, A.M, 26. Procter & Gamble, 26-.

WACHTEL, Jacques L(ouis), *Chemistry.* Donora, Pa, 11/20/18; m. 45, c. 1. A.B, Oberlin Col, 39; Ph.D, Yale, 42. Schenley Labs, Inc. (Lawrenceburg), 45-.

WACK, Paul E(dward), *Physics.* Council Bluffs, Ia, 4/28/19. A.B, Creighton, 41; M.S, Notre Dame, 42, Ph.D, 47. Portland, asst. prof, 49-.

WADE, Frank B(ertram), *Chemistry.* New Bedford, Mass, 7/8/75, died, 50; m, c. 2. B.S, Wesleyan, 01. Shortridge High Sch. (Indianapolis), 03-49. Ind. Acad. Sci. (pres, 27). Gems; diamonds found in Indiana.

WAGENHALS, E(dward) R(empel), *Engineering.* Muncie, Ind, 7/15/05; m. 37, c. 2. B.S, Denison, 27. Radio Corp. Am. Mfg. Co. (N. J.), res. eng, 32-46, ch. eng, 42-46; Sonotone Corp, 47-.

WAGNER, Frank C(aspar), *Engineering.* Ann Arbor, Mich, 10/5/64, died, 28; m. 92, c. 5. A.M, Michigan, 84, B.S, 85, D.E, 27. Rose Poly. Inst, 96-28, prof, 04-23, pres, 23-28.

WAGNER, Kenneth A., *Botany.* Union City, Ind, 11/20/19; m. 45. A.B, DePauw, 41, A.M, 46. Tennessee, instr, 47-.

WAGONER, Kenneth S(hrout), *Psychology.* Waldron, Ind, 7/8/11; m. 46. A.B, DePauw, 32; A.M, Washington (St. Louis), 34, Ph.D, 38. DePauw, 46-, assoc. prof, 47-.

WAIT, Henry H(eilman), *Electrical engineering.* Chicago, Ill, 10/27/69, died, 31. B.S, Mass. Inst. Tech, 91. Hill Pump Wks. (Anderson, Ind.), 05-31.

WAKIM, K(halil) G(eorges), *Physiology.* Sidon, Lebanon, 7/17/07, nat. 45; m. 36. B.A, American U. (Beirut), 29, M.D, 33. Indiana, 41-46, prof, 43-46; Minnesota, 46-.

WALDEN, George B(allard), *Biochemistry.* Franklin, Ind, 2/18/95; m, c. 2. B.S, Franklin Col, 17. Eli Lilly & Co, 17-, assoc. exec. dir. biochem. res, 45-. Insulin and liver extract production.

WALDMAN, Bernard, *Physics.* N. Y. C, 10/12/13; m. 42. A.B, N. Y. U, 34, Ph.D, 39. Notre Dame, 38-, prof, 45-.

WALDO, C(larence) A(biathar), *Mathematics.* Hammond, N. Y, 1/21/52, died, 26. A.B, Wesleyan, 75, A.M, 78; Ph.D, Syracuse, 93. Rose Poly. Inst, prof, 83-91; DePauw, prof, 91-95; Purdue, head prof, 95-08; Washington (St. Louis), prof, 08-17. Ind. Acad. Sci. (pres, 98).

WALDO, John H(ardenbergh), *Organic chemistry.* Philadelphia, Pa, 2/15/98; m. 21, c. 1. B.S, Illinois, 19, M.S, 20. Eli Lilly & Co, 22-, supt. org. chem. develop. and prod, 40-.

WALDRON, William Robert, *Organic chemistry.* New Germantown, N. J. 5/27/94; m. 41. A.B, Cornell, 17; Ph.D, Hopkins, 22. Standard Oil Co. Ind, 22-24; Dupont Co, 24-.

WALERSTEIN, I(sidor), *Physics.* Lubartow, Poland, 3/1/05. B.A, Toronto, 26; Ph.D, Chicago, 29. Purdue, 29-, assoc. prof, 39-.

WALING, J(oseph) (Lee), *Structural engineering.* Brook, Ind, 3/17/16; m. 42, c. 2. B.S, Purdue, 38, M.S.E, 40. Purdue, 40-, assoc. prof, 47-.

WALKER, Edward L(ewis), *Psychology.* Connersville, Ind, 6/18/14; m. 39, c. 1. A.B, Indiana, 38, M.A, 40; Ph.D, Stanford, 47. Ind. State Prison, 38-41; Michigan, asst. prof, 47-.

WALKER, Gordon L(oftis), *Mathematics.* Salt Lake City, Ut, 10/29/12; m. 38, c. 1. B.S, Louisiana, 37, M.A, 38; Ph.D, Cornell, 42. Purdue, asst. prof, 47-.

WALKER, Seth S(tetson), *Chemistry.* Orleans, Ind, 1/26/86; m. 10, c. 2. B.S, John S. Stetson, 07; B.S, Chicago, 07, M.S, 09. Purdue, 09-10; Thornton & Co, 34-.

WALKER, Stanton, *Engineering.* Vevay, Ind, 3/18/94; m. 16, c. 3. B.S, Illinois, 17. Natl. Sand & Gravel Assn, 26-.

WALLACE, Frank N., *Entomology.* Chicago, Ill, 8/9/78; m, c. 1. Asst. to state entom, Ind, 07-16, state entom, 17-50. Expert photographer of wildlife; has given many popular illustrated lectures; highly serviceable to Ind. Acad. Sci. (pres, 40).

WALLACE, L(awrence) W(ilkerson), *Engineering.* Webberville, Tex, 8/5/81; m. 05, 34, c. 2. B.S, A. & M. Col. (Tex.), 03; M.E, Purdue, 12. Purdue, instr. to prof, 06-17; Diamond Chain & Mfg. Co. (Ind.), 17-19; Crane Co, res, 37-41.

WALLACE, William James, *Anthropology*. Oakland, Calif, 1/2/15; m. 46. Ph.D, California, 46. Indiana, instr, 46-.

WALLER, William Henry, *Anatomy*. Frontier, Mich, 8/2/09; m. 32, c. 2. A.B, DePauw, 30; Ph.D, Cornell, 33; M.D, Georgia, 48. South Dakota, prof, 37-44; Georgia, assoc. prof, 44-48; Boston, 48-.

WALSH, John E(dward), *Mathematics*. Grand Junction, Colo, 5/28/19; m. 46, c. 1. B.S, Notre Dame, 41; M.A, California L. A, 44; Ph.D, Princeton, 47. Rand Corp, 47-.

WALTER, E(dmund) D(avis), *Biochemistry*. Jennerstown, Pa, 2/26/96. B.S, Pa. State Col, 22; M.S, Ohio State, 31, Ph.D, 34. Purdue, soybean prods. lab, 37-.

WALTER, E(lmer) V(alentine), *Entomology*. Vernon, Ia, 2/13/91; m. 16, c. 3. B.S, Iowa State Col, 16. Purdue exp. sta, 19-.

WALTER, Fred R(udolf), *Chemical engineering*. Ft. Lee, N. J, 8/30/15; m. 44, c. 1. B.S, Michigan, 37, M.S, 38. Standard Oil Co. Ind, 38-.

WALTERS, A(rthur) L(ouis), *Pharmacology*. Battleground, Ind, 1/20/84. B.S, Purdue, 04; M.D, Hopkins, 12. Eli Lilly & Co, 04-, asst. dir. scientific div, 13-.

WALTERS, Francis M(arion), *Physics, Metallurgy*. La Porte, Ind, 4/25/88; m. 16, c. 3. A.B, Missouri, 11, Ph.D, 20. Carnegie Inst. Tech, 24-34, phys, 32-34; Naval Res. Lab, 39-46, head phys, 43-46; Los Alamos Sci. Lab, 46-.

WALTERS, G(eorge) C(harles), *Chemistry*. Bellaire, O, 7/25/15; m. 42, c. 2. B.A, Ohio State, 38; M.A, Purdue, 40, Ph.D, 42. J. I. Holcomb Co. (Indianapolis), mgr. res, 45-.

WALTHER, Miriam Elaine, *Astronomy*. Clinton, Ind, 2/6/22. A.B, Indiana, 43; M.A, Virginia, 45; Ph.D, Radcliffe Col, 48. South. California, instr, 49-.

WALTS, Charles C., *Dairy manufacturing*. New Albany, Ind, 10/24/00; m. 20, c. 1. B.S.A, Purdue, 24; M.S, Connecticut, 25; Ph.D, Pa. State Col, 35. Creamery Package Mfg. Co. (Chicago), res, 38-45; H. P. Hood & Sons, mgr. res, 47-.

WALTZ, Joseph E(lmer), *Physical chemistry*. New Palestine, Ind, 7/11/15; m. 42. A.B, Indiana, 37, A.M, 38, Ph.D, 41. Dupont Co, 41-.

WANN, Frank B(urkett), *Plant physiology*. Warsaw, Ind, 4/16/92; m. 20, c. 1. A.B, Wabash Col, 14; Ph.D, Cornell, 20. Utah State Agr. Col, 26-, prof, 46-.

WANTLAND, Kenneth W(arren), *Chemistry*. Plainfield, Ind, 6/20/05; m. 30, c. 2. A.B, Franklin Col, 28. Eli Lilly & Co, 28-, res. dept. head, 46-.

WARD, Elizabeth B(urgess) (Mrs. H. A. Durflinger), *Animal ecology*. Ft. Wayne, Ind, 7/8/12; m. 48. A.B, Western Col, 33; A.M, Cincinnati, 34, Ph.D, 39. Butler, 40-, assoc. prof, 48-.

WARD, George E(dward), *Chemistry*. Los Angeles, Calif, 6/5/08; m. 30, c. 3. B.S, State Col. Wash, 30; M.A, Geo. Washington, 33; Ph.D, Georgetown, 40. Schenley Labs, Inc. (Lawrenburg, Ind.), 45-.

WARD, Helen L(avina), *Biological science*. Lafayette, Ind, 12/10/10. B.S, Purdue, 33, M.S, 36, Ph.D, 39. Tennessee, 44-, asst. prof, 47-.

WARD, Lenore (Babcock), *Genetics*. Syracuse, N. Y, 3/30/87. A.B, Ind. State Nor. Sch, 15; A.M, Michigan, 19, Ph.D, 22. Harcum Jr. Col, Bryn Mawr, Pa, 37-.

WARDER, Robert B(owne), *Chemistry* (starred). Cincinnati, O, 3/28/48, died, 05; m. 84 . A.B, Earlham Col, 66, A.M, 73. Purdue, prof, 83-87; Harvard, prof, 87-05.

WARFEL, H(erbert) E(lmer), *Vertebrate zoology*. Yorktown, Ind, 9/5/02; m. 29, c. 2. A.B, West. State Col, 26; M.S, Oklahoma, 31. U. S. Fish & Wildlife Serv, aquatic biol, 46-.

WARNER, Cecil F(rancis), *Mechanical engineering*. Parker, Ind, 6/13/15; m. 39, c. 2. B.S, Purdue, 39, Ph.D, 45. Purdue, 42-, asst. prof, 46-.

WARNER, Glen W(ones), *Physics*. Decatur, Ind, 10/23/83; m. 07, c. 1. B.S, Indiana, 13, Ph.D, 36; A.B, Chicago, 20. Ind. high. schs, 13-17; Crane Jr. Col, instr, 27-33; Chicago City Col, Wilson Branch, 35-.

WARNER, J(ohn) C(hristian), *Chemistry*. Goshen, Ind, 5/28/97; m. 25, c. 2. A.B, Indiana, 19, M.A, 20, Ph.D, 23. Indiana, instr, 21-24; Carnegie Inst. Tech, 26-49, prof, 38-49, dean grad. studies, 45-49.

WARNER, M(ary) La Vinia, *Psychology*. Dundas, O, 8/11/95. B.S, Ohio (Athens), 18; A.M, Columbia, 22; Ph.D, Indiana, 28. Ind. pub. schs, 26-28; Blossom Hill Sch. Cleveland, supt, 34-.

WARNOCK, Jacob E(ugene), *Civil engineering*. Honey Creek, Ind, 4/23/03; m. 33, c. 2. B.S, Purdue, 25, C.E, 34; M.S, Colorado, 39. U. S. Bur. Reclamation, ch, hydraul. lab. (Denver), 35-.

WARREN, Don C(ameron), *Genetics*. Saratoga, Ind, 7/16/90; m. 10, c. 1. A.B, Indiana, 14, A.M, 17; Ph.D, Columbia, 23. Kans. State Col, exp. sta, 23-48; U. S. Dept. Agr, Purdue, 48-. Poultry Sci. Assn. (pres, 41-43).

WARREN, Kenneth S(inclair), *Organic chemistry.* Colorado Springs, Colo, 3/14/16; m. 41, c. 2. B.A, Okla. City, 36; M.S, Oklahoma, 38; Ph.D, Purdue, 47. U. S. A. (Picatinny Arsenal), res, 41-.

WARREN, Marshall R(ay), *Pharmacology.* Somerset, Ky, 8/31/10; m. 39. A.B, DePauw, 33; M.A, Cincinnati, 36, Ph.D, 39. Tennessee, assoc. prof, 48-.

WARTHIN, A(ldred) S(cott), *Pathology* (starred), *Anatomy.* Greensburg, Ind, 10/21/66, died, 31. A.B, Indiana, 88; A.M, Michigan, 90, M.D, 91, Ph.D, 93. Michigan, 95-31, prof, 03-31. Soc. Cancer Res. (pres, 27).

WARWICK, E(verett) J(ames), *Animal husbandry.* Aledo, Ill, 5/2/17; m. 42, c. 2. B.S, Illinois, 39; M.S, Wisconsin, 42, Ph.D, 43. Purdue, prof, 47-.

WASHER, Francis E(arl), *Physics.* Pennellville, N. Y, 7/21/05; m. 38, c. 2. B.A, Cornell, 28; M.Sc, Purdue, 30, Ph.D, 36. U. S. Bur. Standards, 35-.

WATERFALL, Wallace, *Acoustics.* Columbia City, Ind, 5/27/00; m. 23, c. 1. B.Sc, Illinois, 23, Eng. Physicist, 31. Ind. schs, 23-25; Celotex Corp, 25-, dir. res. 46-.

WATERMAN, Frank A(llan), *Physics* (starred). Oswego, N. Y, 7/9/65. A.B, Princeton, 88, Ph.D, 96. Purdue, 91-93, prof, 92-93; Smith Col, prof, 97-33.

WATERS, Dewey E., *Chemistry.* Monroe, Va, 12/14/15; m. 42, c. 2. A.B, Lynchburg Col, 37; M.S, Kentucky, 40. Ind. Ordnance Works, super, 41-43; Dupont Co, 45-.

WATKINS, Charles H(enry), *Chemical engineering.* Henshaw, Ky, 3/21/13; m. 40, c. 4. B.S, Louisville, 35, M.S, 36; Ph.D, Purdue, 39. Standard Oil Develop. Co, res, 39-45; Universal Oil Prods, res, 45-.

WATSON, Carl G(wartney), *Physics.* Mauckport, Ind, 6/12/89. A.B, Indiana, 14, A.M, 17. Purdue, instr, 14-18; S. Dak. Sch. Mines, prof, 20-.

WATSON, J(oseph) R(alph), *Entomology.* Berea, O, 8/1/74, died, 46. B.S, Baldwin Col, 97; A.M, Western Reserve, 99. Rochester Col. (Ind.), 03-06; Florida, exp. sta, 11-.

WATSON, Roger William, *Organic chemistry.* Mason City, Ia, 5/1/17; m. 41, c. 1. B.A, Milton Col, 39; M.S, Wisconsin, 41. Standard Oil Co. Ind, 41-.

WATTERS, Robert Lawrence, *Electronics.* Monroe, Mich, 10/29/19; m. 43, c. 1. B.S, Notre Dame, 41. Gen Elec, res, 42-.

WATTS, C(ecil) E(dwin), *Chemistry.* Thompsonville, N. Y, 12/15/86; m. 24, c. 2. A.B, Delaware, 09. Commercial Solvents Corp. (Terre Haute), res, 27-.

WATTS, C(hester) B(urleigh), *Astronomy.* Winchester, Ind, 10/27/89; m. 17, c. 1. A.B, Indiana, 15. Naval Observ, 11-.

WATTS, Geo(rge) W(illiam), *Mechanical engineering.* Chicago, Ill, 11/8/92; m. 31, c. 2. B.S, Illinois, 15. Standard Oil Co. Ind, 16-, ch. eng, 28-45, dir. eng, 45-.

WAUGH, Richard C(ampbell), *Organic chemistry.* Fayetteville, Ark, 8/8/17. B.S, Arkansas, 37; Ph.D, Colorado, 42. Standard Oil Co. Ind, 41-.

WEAR, John I(ngram), *Agronomy.* Opelika, Ala, 4/29/16; m. 41, c. 1. B.S, Ala. Poly. Inst, 38, M.S, 41; Ph.D, Purdue, 49. Ala. Poly. Inst, exp. sta, 45-, assoc. soil chem, 49-.

WEATHERWAX, Paul, *Botany.* Worthington, Ind, 4/4/88; m. 16, c. 3. A.B, Indiana, 14, A.M, 15, Ph.D, 18. Indiana, 15-, prof, 35-. Ind. Acad. Sci. (pres, 41). Origin of corn.

WEAVER, Earl, *Dairying.* Brazil, Ind, 7/27/93; m. 20, c. 4. B.S, Okla. A. & M. Col, 13; M.S, Iowa State Col, 17; Ph.D, Minnesota, 38. Okla. A. & M. Col, 29-37; Mich. State Col, 37-.

WEAVER, Fleming Ross, *Ordnance engineering.* Chapel Hill, N. C, 5/8/91; m. 27. B.S, North Carolina, 12. Inland Steel Co. (Ind.), 13-15; Army Chem. Center (Md.), 20-.

WEAVER, Floyd C(alvin), *Physics.* Lafayette, Ind, 7/24/87. B.S, Purdue, 10. U. S. Bur. Standards, 10-23; U. S. Bur. Mines, 23-.

WEBB, Glenn M(iller), *Physics.* Hastings, Mich, 3/20/10; m. 40, c. 2. B.S, Calif. Inst. Tech, 31; M.S, Washington (St. Louis), 33, Ph.D, 35. Standard Oil Co. Ind, 48-.

WEBB, Harold D(onivan), *Physics.* Franklin, Ind, 9/23/09; m. 37, c. 4. A.B, Franklin Col, 37; A.M, Indiana, 32, Ph.D, 39. Illinois, asst. prof, 47-.

WEBB, J(ames) S(hepard), *Physics, Radio engineering.* Valparaiso, Ind, 6/28/94; m. 28, c. 1. B.S, Valparaiso, 17; M.S, Chicago, 26; Ph.D, Cornell, 30. Minnesota, assoc. prof, 30-.

WEBB, Richard C(larence), *Electrical engineering.* Omaha, Nebr, 9/2/15; m. 41, c. 1. B.S, Denver, 37; Colorado, 39; M.S, Purdue, 44. Purdue, instr, 42-45; Radio Corp. Am, 45-.

WEBB, Richard L(ockwood), *Anatomy.* A.B, Illinois, 24, M.S, 25, Ph.D, 31. Indiana, prof, 46-, chm. dept, 48-.

WEBB, William L(ary), *Chemistry.* Lexington, Ky, 3/17/12; m. 34, c. 2. B.S, Kentucky, 33, M.S, 34. Standard Oil Co. Ind, 34-, asst. dir. res, 46-.

WEBER, A(rthur) D., *Animal husbandry.* Muscotah, Kans, 6/17/98. B.S, Kans. State Col, 22, M.S, 26; Ph.D, Purdue, 40. Kans. State Col, prof, 31-.

WEBER, C(larence) J(acob), *Biochemistry, Clinical pathology.* Cynthiana, Ind, 10/28/00; m. 23, c. 2. B.S, Illinois, 23; Ph.D, St. Louis, 26; M.D, Kansas, 39. Kansas, 26-, assoc. prof, 45-.

WEBER, Fred Charles, Jr, *Organic chemistry.* St. Louis, Mo, 8/11/14; m. 40, c. 3. B.S, Notre Dame, 36, M.S, 37, Ph.D, 39. Phelan Faust Paint Co, 39-.

WEBER, J(oseph) E(lliott), *Chemistry.* Greenfield, Ind, 5/3/10. A.B, Indiana, 32, A.M, 33, Ph.D, 37. Bowling Green State, 37-, assoc. prof, 46-.

WEBER, Paul, *Chemical engineering.* Nashville, Tenn, 2/27/04. B.S, Mo. State Teachers Col, 25; M.S, Mo. Sch. Mines, 27; Ph.D, Purdue, 35. Ga. Inst. Tech, 34-, prof, 43-, dir. sch. chem. eng, 48-.

WEBER, Stephen Frederick, *Engineering.* Mishawaka, Ind, 4/23/14; m. 44, c. 3. B.S, Mont. State Col, 36. State Hwy. Comn, Mont, 36-.

WEBSTER, F(rancis) M(arion), *Entomology* (starred). Lebanon, N. H, 8/8/49, died, 16. M.S, Ohio (Athens), 93. Purdue, prof, 84-88; Ohio Agr. Exp. Sta, 92-02; U. S. Dept. Agr, 04-16.

WEBSTER, Merritt S(amuel), *Mathematics.* Cheyney, Pa, 6/5/09; m. 36, c. 3. A.B, Swarthmore Col, 31; A.M, Pennsylvania, 33, Ph.D, 35. Purdue, 38-, assoc. prof, 48-.

WEBSTER, Rex N., *Biology.* Lansing, Mich, 12/15/11; m. 48. A.B, Butler, 33; Ph.D, Hopkins, 38. Middlebury Col, 39-, assoc. prof, 45-.

WEBSTER, Richard C(urtis), *Histology, Cytology.* Chicago, Ill, 11/21/12; m. 41. A.B, Louisville, 38, M.S, 40; Ph.D, Kansas, 49. Indiana, asst. prof, 49-.

WEBSTER, R(obert) L(orenzo), *Entomology.* Lafayette, Ind, 10/4/85. A.B, Illinois, 08; Ph.D, Cornell, 21. Iowa State Col, exp. sta, 08-18; State Col. Wash, prof, 26-.

WECHTER, Eugene J(acob), *Chemistry.* Berne, Ind, 7/8/00; m, c. 1. A.B, DePauw, 22; M.S, Wisconsin, 24; Ph.D, 25. Louisville Cement Corp. (Speeds, Ind.), res. dir, 25-.

WECKERLY, M(ark) A(lbert), *Electrical engineering.* Whitehouse, O, 7/4/91; m. 19, c. 2. B.S, Purdue, 16. Quick Action Ignition Co. (Ind.), 16-17; Toledo Scale Co, 17-46.

WEED, Lyle A(lfred), *Immunology, Bacteriology.* Winterset, Ia, 1/15/04. A.B, Simpson Col, 27; M.S, Iowa State Col, 28; Ph.D, Western Reserve, 32; M.D, Iowa, 39. Indiana, asst. prof, 39-.

WEESNER, William E(ldred), *Organic chemistry.* Youngstown, O, 2/24/16; m. 39. A.B, Allegheny Col, 37; M.S, Purdue, 40, Ph.D, 42. Monsanto Chem. Co, 42-.

WEGRICH, O(hmer) G(odfrey), *Mycology.* Terre Haute, Ind, 12/4/15; m. 41, c. 2. B.S, Ind. State Teachers Col, 38; M.S, Purdue, 41, Ph.D, 47. Commercial Solvents Corp. (Terre Haute), 47-.

WEIGAND, C(layton) G(uy), *Medicine.* Crofton, Nebr, 4/28/05; m. 34, c. 3. A.B, B.Sc, Nebraska, 27, M.D, 29. Eli Lilly & Co, 38-, head med. dept, 46-.

WEIMER, Harry R(aymond), *Chemistry.* North Manchester, Ind, 12/9/06. A.B, Manchester Col, 29; M.S, Ohio State, 31, Ph.D, 33. Manchester Col, prof, 38-.

WEIMER, J(ames) L(eRoy), *Plant pathology.* Avilla, Ind, 7/12/87; m. 13, c. 1. A.B, Wabash Col, 12; Ph.D, Cornell, 16. Purdue, exp. sta, 16-17; U. S. Dept. Agr, Bur. Plant Ind, Soils, & Agr. Eng, from asst. path. to sr, 43-.

WEIMER, Paul Eugene, *Chemistry.* North Manchester, Ind, 6/12/20; m. 46. A.B, Manchester Col, 42. Purdue, res. chem, 43-46; Weimer Canning Co. (N. Manchester, Ind.), 46-.

WEIMER, Paul K(essler), *Physics.* Wabash, Ind, 11/5/14; m. 42, c. 2. A.B, Manchester Col, 36; A.M, Kansas, 38; Ph.D, Ohio State, 42. Radio Corp. Am. Labs, res. eng, 42-.

WEIR, H(orace) M(cColloch), *Chemistry, Chemical engineering.* Muncie, Ind, 11/19/94; m. 22, c. 1. B.Ch.E, Purdue, 17; Ph.D, Munich, (Ger.), 26. Prest-O-Lite Co. (Ind.), 19-20; Standard Oil Co. Ind, 20-24.

WEIR, James R(obert), *Forestry.* Scottsburg, Ind, 5/31/82, died, 43. A.B, Indiana, 07; Ph.D, Munich, 11. Culver Mil. Acad, 07-09; U. S. Dept. Agr, forest path, 11-43.

WEISSMAN, S(amuel) I(saac), *Physical chemistry.* South Bend, Ind, 6/25/12; m. 43, c. 2. B.S, Chicago, 33, Ph.D, 38. Washington (St. Louis), 46-, assoc. prof, 47-.

WEITKAMP, Alfred W(illiam), *Chemistry.* Nickerson, Nebr, 11/15/09; m. 35, c. 2. B.S, Midland Col, 33; M.S, Nebraska, 35, Ph.D, 37. Standard Oil Co. Ind, 37-.

WELBORN, R(ussell) W(oody), *Chemical engineering.* Indianapolis, Ind, 8/24/16. B.S, Purdue, 38, Ph.D, 42. Standard Oil Co. Ind, 42-47, res. chem, 44-47; B. F. Goodrich Co, 47-.

WELCH, L(ester) Marshall, *Chemistry.* Shepherdsville, Ky, 12/28/17; m. 42, c. 2. A.B, Taylor, 39; M.S, Purdue, 41, Ph.D, 42. Standard Oil Develop. Co, 44-.

WELCH, Walter B(urchard), *Botany*. Inwood, Ind, 3/31/02; m. 24, c. 1. A.B, Wabash Col, 26; M.S, Chicago, 30, Ph.D, 37. Wabash Col, instr, 26-28; South Ill. Nor, 39-, prof, 49-.

WELCH, Winona H(azel), *Botany*. Goodland, Ind, 5/5/96. A.B, DePauw, 23; A.M, Illinois, 25; Ph.D, Indiana, 28. Cent. Nor. Col, head dept, 26-27; Indiana, instr, 28-30; DePauw, 30-, prof, 39-. Ind. Acad. Sci. (pres, 48). Bryophytes of Indiana.

WELCH, Z(ara) D., *Organic chemistry*. North Manchester, Ind, 6/28/15. A.B, Manchester Col, 37; M.S, Purdue, 39, Ph.D, 42. Purdue, 42-, instr, 49-.

WELCHER, Frank J(ohnson), *Chemistry*. Coal City, Ind, 9/22/07; m. 33, c. 2. A.B, Indiana, 29, A.M, 30, Ph.D, 32. Indiana, exten. div, 32-, assoc. prof, 46-; Butler, 47-48.

WELLBORN, William Wayne, *Chemical engineering*. Shreveport, La, 3/28/21; m. 42, c. 2. Chem.E, Purdue, 44. Los Alamos Sci. Lab, California, 46-.

WELLINGTON, J(oseph) W(orcester), *Horticulture*. Waltham, Mass, 3/1/86; m. 11, c. 3. B.S, Mass. Col, 08; M.S, Maryland, 31. Purdue, exp. sta, 10-13; U. S. Dept. Agr, prin. hort, 20-.

WELLMAN, Mabel T(hatcher), *Home economics*. Boston, Mass, 8/23/72. A.B, Wellesley Col, 95; Ph.D, Chicago, 25. Indiana, 13-37, prof, 23-37.

WELLS, Agnes E(rmina), *Mathematics, Astronomy*. Saginaw, Mich, 1/4/76. A.B, Michigan, 03, Ph.D, 24; A.M, Carleton Col, 16. Indiana, prof, 18-44.

WELLS, Melville B(aker), *Civil engineering*. Commiskey, Ind, 1/27/70; m. 96, c. 2. B.C.E, Purdue, 94, C.E, 95. Armour Inst. Tech, assoc. prof, 03-25, prof, 25-41.

WELLS, Milo, *Physics*. Coal City, Ind, 10/14/05; m. 29. Ph.D, Indiana, 37. Kemet Labs. Co, 37-.

WELSH, C(harles) E(dward), *Chemistry*. Mahanoy City, Pa, 5/5/18; m. 42, c. 2. B.S, Notre Dame, 38, M.S, 39, Ph.D, 41. Gen. Elec, 41-.

WELSHIMER, H(erbert) J(efferson), *Bacteriology*. West Mansfield, O, 2/23/20; m. 46. B.Sc, Ohio State, 43, Ph.D, 47. Indiana, instr, 47-.

WELTY, (Joel) Carl, *Zoology*. Ft Wayne, Ind, 5/30/01; m. 30. A.B, Earlham Col, 24; A.M, Haverford Col, 25; Ph.D, Chicago, 32. Beloit Col, 34-, prof, 38-.

WELTON, Donald E(ldon), *Chemistry*. Pawhuska, Okla, 9/12/19; m. 46, c. 2. A.B, Cent. Col. (Mo.), 40; M.A, Missouri, 42; Ph.D, Purdue, 46. Dupont Co, 46-.

WENDT, Gerald (Louis), *Chemistry* (starred). Davenport, Ia, 3/3/91; m. 16, 47, c. 1. A.B, Harvard, 13, A.M, 14, Ph.D, 16. Standard Oil Co. Ind, 22-24; Pa. State Col, dean, 24-30; *Time*, Inc, sci. ed, 42-45.

WENNINGER, Francis Joseph, *Zoology*. Pamhagen, Austria, 10/27/88, died, 40. Litt.B, Notre Dame, 11, M.S, 17; Ph.D, Vienna, 28. Notre Dame, dean col. sci, 23-40.

WENZKE, Herman H(enry), *Chemistry*. Celina, O, 3/19/99, died, 46. B.S, Ohio State, 21; M.S, Notre Dame, 22, Ph.D, 24. Notre Dame, asst. prof, 30-40.

WERKMAN, C(hester) H(amlin), *Bacteriology*. Ft. Wayne, Ind, 6/17/93; m. 13, c. 1. B.S, Purdue, 19; Ph.D, Iowa State Col, 23. U. S. Dept. Agr, 19-40; Iowa State Col, 25-, prof, 33-, head dept, 45-. Natl. Acad. Sci.

WERNIMONT, Grant (Theodore), *Chemistry*. Geneva, Nebr, 11/30/04; m. 24, c. 1. A.B, Nebr. Wesleyan, 27; A.M, Utah, 29; Ph.D, Purdue, 34. Eastman Kodak, 35-.

WERTENBERGER, E(sther), *Physiology*. Monroe, Mich, 9/23/99. S.B, Chicago, 29, S.M, 32, Ph.D, 39. Indiana, assoc. prof, 48-.

WEST, Judson, Jr, *Chemistry*. South Whitley, Ind, 8/29/09; m. 39, c. 2. A.B, Indiana, 35. Magnavox Co. (Ft. Wayne), 35-, ch. chem, 41-.

WESTLUND, Jacob, *Mathematics*. Orebro, Sweden, 5/18/67, died, 47. Upsala; Stockholm; Ph.D, Yale, 98. Purdue, prof, 00-37.

WETZEL, John William, *Chemistry*. Bellevue, Pa, 4/25/14; m. 36, c. 2. B.S, Franklin and Marshall Col, 37; Ph.D, Purdue, 45. Houdry Process Corp, res. chem, 46-.

WEYER, Albert E(dward), *Zoology*. Wadesville, Ind, 3/31/15; m. 39. A.B, Indiana, 37; M.A, Oberlin Col, 39. N. Dak. Col, 47-, asst. prof, 48-.

WEYL, F. Joachim, *Mathematics*. Zurich, Switzerland, 2/19/15, nat, 40; m. 40, c. 2. B.A, Swarthmore Col, 35; M.A, Princeton, 37, Ph.D, 39. Indiana, 40-44; Off. Naval Res. (Wash, D. C.), 47-.

WHALEY, R(andall) M(cVay), *Physics*. Hastings, Nebr, 8/21/15; m. 39, c. 3. B.A, Colorado, 38, M.A, 40; Ph.D, Purdue, 47. Purdue, 45-, prof, 49-.

WHAPLES, George (William), *Mathematics*. Neponset, Ill, 11/27/14. A.B, Knox Col, 35; A.M, Wisconsin, 37, Ph.D, 39. Indiana, assoc. prof, 47-.

WHEELER, Keith W(ilson), *Organic chemistry*. Iowa City, Ia, 1/9/18; m. 40, c. 2. A.B, Knox Col, 38, M.S, Purdue, 40, Ph.D, 44. Wm. S. Merrell Co. (Cincinnati), 43-.

WHEELER, Norman C., *Physiology.* Blaine, Ky, 11/16/11; m. 38, c. 2. A.B, Berea Col, 36; M.S, Purdue, 39, Ph.D, 42. Georgia, res. assoc, 46-.

WHETZEL, H(erbert) H(ice), *Plant pathology* (starred). Near Avilla, Ind, 9/5/77, died, 49. A.B, Wabash Col, 02, A.M, 06, Sc.D, 31. Cornell, 04-47, prof, 09-47. Phytopath. Soc. (ex-pres.).

WHISTLER, Roy L(ester), *Carbohydrate chemistry.* Morgantown, W. Va, 3/21/12; m. 35. B.S, Heidelberg Col, 34; M.S, Ohio State, 35; Ph.D, Iowa State Col, 38. Purdue, assoc. prof, 46-.

WHITACRE, Francis M(arion), *Organic chemistry.* Salamonia, Ind, 4/10/05; m. 29. A.B, Indiana, 27, A.M, 28, Ph.D, 35. Case Sch. Appl. Sci, instr. to prof, 29-45; Schieffelin & Co. (N. Y.), 45-.

WHITAKER, A(rthur) C(harles), *Organic chemistry.* Wynnewood, Okla, 4/24/12; m. 39, c. 1. B.S, Idaho, 36, M.S, 38; Ph.D, Purdue, 42. Gulf Res. & Develop. Co, 42-.

WHITAKER, Wayne L(ewis), *Anatomy.* Putnamville, Ind, 8/9/04; m. 28, c. 3. A.B, DePauw, 26; M.A, Michigan, 34, Ph.D, 39. Michigan, 37-, assoc. prof, 49-.

WHITCRAFT, L(eslie) H(arper), *Mathematics.* Wabash, Ind, 3/11/85; m. 16, c. 1. A.B, Indiana, 14; M.A, Chicago, 23; Ph.D, Columbia, 32. Sch. supt. (Ind.), 14-20; Ball State Teachers Col, 24-, prof, 25-.

WHITE, Alfred E., *Mathematics.* Liberty, Ind, 4/29/79. B.S, Purdue, 04, M.S, 09. Kans. State Col, prof, 18-.

WHITE, Charles E(dgar), *Mathematics.* Trafalgar, Ind, 10/25/68, died, 43. A.B, Indiana, 96, A.M, 07. Ind. high schs, 97-06; Muskingum Col, prof, 21-.

WHITE, Harold E(verett), *Floriculture.* Marshall, Ill, 8/13/99; m, c. 4. B.S, Purdue, 28, M.S, 29. Mass. State Col, res. prof, 30-47.

WHITE, H(enry) E(llis), *Agriculture.* McLean Co, Ky, 2/2/91. B.S, Wisconsin, 16; M.S, N. C. State Col, 30; Ph.D, Cornell, 35. U. S. Dept. Agr. (Indianapolis), 36-38; Ark. State Col, prof, 38-.

WHITE, James Russell, *Physical chemistry.* Elgin, Ill, 7/13/19; m. 44, c. 1. B.S, Indiana, 42; Ph.D, Yale, 44. Socony-Vacuum Oil Co, 47-.

WHITE, Jesse H(ayes). *Psychology.* Alamo, Ind, 3/5/77; m. 12, 46, c. 3. A.B, Indiana, 03, A.M, 04; Ph.D, 08. Sch. supt. (Ind.), 04-06; Pittsburgh, prof, 08-30; Millikin, pres, 30-34.

WHITE, Joe Lloyd, *Agronomy.* Pierce, Okla, 11/8/21; m. 45, c. 1. B.S, Okla. A. & M. Col, 44, M.S, 45; Ph.D, Wisconsin, 47. Purdue, asst. prof, 47-.

WHITE, John, *Chemistry.* Poolesville, Md, 2/24/66; m. 04. A.B, Hopkins, 88, A.M, Ph.D, 91. Rose Poly. Inst, 03-36.

WHITE, J(onathan) W(inborne), *Agricultural chemistry.* Bellefonte, Pa, 9/29/16; m. 43, c. 1. B.S, Pa. State Col, 37; M.S, Purdue, 39, Ph.D, 42. U. S. Dept. Agr, 45-.

WHITE, Philip C(leaver), *Chemistry.* Chicago, Ill, 5/10/13; m. 39, c. 2. B.S, Chicago, 35, Ph.D, 38. Standard Oil Co. Ind, 38-, ch. chem, 46-.

WHITE, Virginia B(atie), *Botany.* Montgomery City, Mo, 4/11/97. B.S, Missouri, 22, A.B, 26, A.M, 28, Ph.D, 35. Purdue, asst. prof. nutrition, 39-.

WHITE, Wallace F(letcher), *Pharmacology.* Louisville, Ky, 5/11/08; m. 39, c. 3. B.S, Butler, 30; M.S, Iowa, 32. Indiana, zool, 35-37; Connecticut, col. phar, 41-, assoc. prof, 48-.

WHITE, W(illia)m Charles, *Medicine.* Woodstock, Ont, Can, 9/3/74, died, 47. M.B, Toronto, 98, M.D, 02. Ind. Cent. Col, 00-05; Indiana, 05-07; R. B. Mellon Res. Lab, dir, 07-23; U. S. Pub. Health Serv, Natl. Inst. Health, path, 23-.

WHITEHEAD, Calvert Watson, *Chemistry.* St. George, Ut, 6/20/13; m. 37, c. 2. A.B, Brigham Young, 37, M.A, 41; Ph.D, Nebraska, 45. Eli Lilly & Co, 45-.

WHITEHEAD, G(eorge) W(illiam), *Mathematics.* Bloomington, Ill, 8/2/18; m. 47. S.B, Chicago, 37, S.M, 38, Ph.D, 41. Purdue, instr, 41-45; Brown, 47-, assoc. prof, 48-.

WHITELY, Paul L(eRoy), *Psychology.* Summitville, Ind, 12/31/93; m. 33, c. 1. A.B, Earlham Col, 20; A.M, Chicago, 23, Ph.D, 27. Franklin and Marshall Col, prof, 30-.

WHITLATCH, George I(saac), *Geology, Industrial economics.* Charlestown, Ind, 2/18/05; m. 35, c. 1. A.B, Indiana, 28, A.M, 29, Ph.D, 32. State Planning Comn, Tenn, res. dir, 43-.

WHITMAN, Walter G(ordon), *Chemical engineering.* Winthrop, Mass, 11/30/95; m. 21, c. 3. B.S, Mass. Inst. Tech, 17, M.S, 20. Standard Oil Co. Ind, 26-34, assoc. dir. res, 31-34; Mass. Inst. Tech, prof, 34-.

WHITMER, Carroll A(braham), *Psychology.* North Liberty, Ind, 1/4/99; m. 26, c. 1. A.B, Indiana, 23, A.M, 26; Ph.D, Pittsburgh, 31. Prin, Ind. high schs, 22-25; Indiana, instr, 26-27; Pittsburgh, 28-, prof, 48-.

WHITMER, Charles A(ustin), *Physics.* Flat Rock, Ind, 2/10/07; m. 45, c. 1. A.B, DePauw, 28; M.S, Iowa, 31; Ph.D, Ohio State, 36. Rutgers, assoc. prof, 46-.

WHITMER, Robert Morehouse, *Physics.* Battle Creek, Mich, 6/14/08; m. 36, c. 2. B.A, Michigan, 28, M.A, 34, Ph.D, 39. Purdue, instr, 37-41; Rensselaer Poly. Inst, 46-, assoc. prof, 48-.

WHITMORE, Robert A(rthur), *Plant physiology.* Zionsville, Ind, 1/19/13; m. 38, c. 2. B.Sc, Butler, 40; Ph.D, Chicago, 43. Puerto Rico, head dept, exp. sta, 47-.

WHITNACK, Gerald C(ole), *Analytical chemistry.* Elkhart, Ind, 7/21/13; m. 37, c. 4. A.B, Wittenberg Col, 38. Naval Ordnance Test. Sta, 46-.

WHITNEY, A(mbrose) G(runhagen), *Organic chemistry.* St. Paul, Minn, 12/25/14; m. 40, c. 2. B.S, Col. St. Thomas, 36; Ph.D, Minnesota, 40. Commercial Solvents Corp. (Terre Haute), 40-44, 49-.

WIANCKO, A(lfred) T(heodor), *Agronomy.* Ont, Can, 10/16/72, died, 48. B.S.A, Ont. Agr. Col, 95. Purdue, exp. sta, ch. dept, 03-43. Soil Sci. Soc. (pres, 22).

WIBLE, William M(iller), *Mathematics, Physics.* Near Salem, Ind, 12/5/71; m. 94, c. 4. A.B, Indiana, 06, A.M, 08. Vincennes, prof, 11-12; Mich. Agr. Col, instr, 12-20.

WICHMANN, Arthur Paul, *Metallurgy.* Fenton, Ind; m. 28, c. 3. B.S, Wyoming, 18; M.S, Washington (Seattle), 20. Braden Copper Co. (Chile), 22-34; Colo. Sch. Mines, assoc. prof, 37-.

WICKENDEN, Thomas Howard, *Metallurgy.* Toledo, 5/26/88; m. 16, c. 2. B.Chem.Eng, Michigan, 13. South Bend Control Labs, 14-20; Int. Nickel Co, 22-, v. p, 48-.

WICKWIRE, G(rant) T(ownsend), *Geology.* Berlin, Conn, 8/26/96. Ph.B, Wesleyan, 26; M.S, Yale, 29. Hanover Col, prof, 28-.

WIEDEMANN, H(ugo) E(dmund), *Industrial chemistry.* Harrisburg, Ill, 4/1/82; m. 10. B.S, Rose Poly. Inst, 03, M.S, 07. State chem, Mo, 12-33.

WIEDENBECK, M(arcellus) L(ee), *Physics.* Lancaster, N. Y, 10/11/19; m. 46, c. 1. B.S, Canisius Col, 41; M.S, Notre Dame, 42, Ph.D, 45. Michigan, 46-, assoc. prof, 49-.

WIEGANDT, Herbert F(rederick), *Chemical engineering.* Newaygo, Mich, 1/4/17; m. 44, c. 2. B.S, Ch.E, Purdue, 38, M.S.E, 39, Ph.D, 41. Standard Oil Co. Ind, 41-44; Cornell, 47-, assoc. prof, 49-.

WIESNER, Harold J(erome), *Physical chemistry.* Port Huron, Mich, 4/14/16; m. 40, c. 3. B.S, Mich. State Col, 38, Ph.D, 43. Radio Corp. Am, Victor Div. (Indianapolis), res, 43-45; C. G. Conn, Ltd. (Elkhart), 45-48; Bendix Aviation Corp. (South Bend), 48-.

WIGGAM, Albert Edward, *Social psychology, Genetics.* Austin, Ind, 71, m. 02. B.S, Hanover, 93, M.A, 03, LL.D, 32; D.Sc, Colgate, 29. Author six widely read books; newspaper columnist, lecturer.

WIGGAM, David R(oscoe), *Chemistry.* Vernon, Ind, 95. B.S, Purdue, 18, Ch.E, 22; M.S, Mass. Inst. Tech, 28. Hercules Powder Co, 26-; Cellulose Prods, mgr, 35-.

WIGGINS, John S(hearon), *Physics.* Chicago, Ill, 2/8/15. A.B, Earlham Col, 36; M.S, Calif. Inst. Tech, 38. Oklahoma, asst. prof, 46-.

WILBUR, J(ohn) W(arren), *Dairy husbandry.* Bethlehem, Pa, 10/5/97; m. 31, c. 2. B.S, Missouri, 19; M.S, Minnesota, 21. Purdue, 21-, asst. prof, 27-43, assoc. prof, 43-.

WILCOX, C(arl) C(lifford), *Mechanical engineering.* Busti, N. Y, 5/24/80. M.E, Ohio State, 07. Studebaker Corp. (South Bend), 22-38; Notre Dame, assoc. prof, 39-.

WILDING, James L(ittle), *Fisheries biology.* Salt Lake City, Ut, 10/22/11; m. 42, c. 2. A.B, Utah, 33, A.M, 35; Ph.D, Indiana, 38. U. S. A. (Dugway Proving Ground), dir. med. res. lab, 44-47; Smith-Wilding Co, mgr, 47-.

WILDMAN, E(rnest) A(tkins), *Chemistry.* Chattanooga, Tenn, 7/2/89; m. 16, c. 2. B.S, Earlham Col, 12; M.S, Illinois, 14, Ph.D, 22. Eli Lilly & Co, 17-19; Earlham Col, prof, 19-.

WILEY, H(arvey) W(ashington), *Chemistry* (starred). Kent, Ind, 10/18/44, died, 30. A.B, Hanover Col, 67, A.M, 70, Ph.D, 76; M.D, Indiana Med. Col, 71; B.S, Harvard, 73. Butler, 68-70; Purdue, prof, and state chem, Ind, 74-83; U. S. Dept. Agr, ch. chem, 83-12. Chem. Soc. (pres, 93-94); Agr. Chem. (life pres, 12-); Therapeut. Soc. (pres, 10); Ind. Acad. Sci. (pres, 02). Pure foods.

WILEY, James R(ollo), *Animal husbandry.* Butler, Ind, 9/5/87; m. 15, c. 4. B.S.A, Purdue, 13, M.S.A, 30. Purdue, 18-, assoc. prof. and exp. sta, 25-46, asst. ch, 46-.

WILEY, Llewellyn N(oel), *Psychology.* Vienna, Va, 7/30/10; m. 42. B.S, Bradley Poly. Inst, 31; M.S, Purdue, 34; Ph.D, Illinois, 40. DePauw, instr, 40-41; U. S. Vet. Admin. Guidance Center (Calif.), 46-.

WILEY, Paul F(ears), *Pharmaceutical chemistry.* Sullivan, Ill, 6/21/16; m. 38, c. 2. B.S, Illinois, 38, M.S, 39; Ph.D, Minnesota, 44. Eli Lilly & Co, 46-.

WILEY, R(alph) B(enjamin), *Sanitary engineering.* Detroit, Mich, 3/5/84; m. 09, c. 2. B.S, Michigan, 06. Purdue, 08-, prof, 19-.

WILHELM, Ernest J(ohn), *Chemical engineering.* South Bend, Ind, 11/5/04; m. 30, c. 2. B.S, Notre Dame, 27, M.S, 28, Ph.D, 30. Notre Dame, 38-, prof, 48-.

WILKINS, Walter L(aroy), *Clinical psychology.* Chicago, Ill, 7/11/07; m. 38, c. 4. Ph.B, Loyola (Ill.), 28; M.A, Northwestern, 31, Ph.D, 33. Notre Dame, 34-49, prof, 46-49.

WILKINSON, P(aul) D(eLassus), *Chemistry.* St. Louis, Mo, 8/17/96; m. 18. B.S, Mo. Sch. Mines, 19; M.S, Iowa State Col, 21, Ph.D, 30. Ind. State Teachers Col, 21-, prof, 34-.

WILKINSON, Roger G(ilbert), *Physics.* Buffville, Kans, 9/6/12; m. 42. S.B, Chicago, 38, Ph.D, 46. Indiana, 46-, assoc. prof, 49-.

WILLARD, J(ohn) W(esley), *Chemistry.* Davenport, Ia, 6/23/07; m. 28, c. 2. B.S, Purdue, 29, M.S, 40, Ph.D, 43. S. Dak. Sch. Mines, assoc. prof, 46-.

WILLIAMS, Bert(ice) C(larence), *Botany.* Greensburg, Ind, 3/20/09; m. 36, c. 1. A.B, DePauw, 33; M.A, Indiana, 40, Ph.D, 46. Ind. high schs, 34-44; Alabama, 45-, assoc. prof, 47-.

WILLIAMS, Charles L(eonard), *Pharmacy.* Tuscola, Ill, 2/5/93; m. 26, c. 2. Ph.G, Purdue, 22; B.Sc, Ohio State, 29, M.A, 33. Ohio State, 22-, asst. prof, 34-.

WILLIAMS, Eliot C(hurchill), *Zoology.* Chicago, Ill, 11/9/13; m. 45, c. 1. A.B, Cent. Y.M.C.A. Col, 35; Ph.D, Northwestern, 40. Wabash Col, assoc. prof, 48-.

WILLIAMS, J(oseph) A., *Psychology.* Near Washington, Ind, 2/22/79. A.B, Indiana, 06, A.M, 10, Ph.D, 24. S. Dak. Col, prof, 21-.

WILLIAMS, K(enneth) P(owers), *Mathematics.* Urbana, O, 8/25/87; m. 20. A.B, Indiana, 08, A.M, 09; Ph.D, Princeton, 13. Indiana, 09-, prof, 24-.

WILLIAMS, N(eil) H(ooker), *Physics.* Almont, Mich, 10/23/70; m. 01, c. 2. B.S, Michigan, 93, M.S, 95, Ph.D, 12. Rose Poly. Inst, 03-38, asst. prof, 05-08; Michigan, prof, 18-44.

WILLIAMS, R(obert) E(dwin), *Science writing.* Mulberry, Ind, 3/6/12; m. 44, c. 2. B.S, Purdue, 34. Standard Oil Co. N. J, 46-.

WILLIAMS, Russell R(aymond), Jr, *Radio chemistry.* Pontiac, Mich, 10/31/20; m. 42, c. 2. B.A, Buffalo, 41; Ph.D, Stanford, 44. Notre Dame, asst. prof, 46-.

WILLIAMS, W(alter) L(ong), *Veterinary science.* Argenta, Ill, 2/26/56, died, 45. Purdue, prof, 91-93; Cornell, prof, 96-21.

WILLIAMSON, E(dward) B(ruce), *Entomology.* Marion, Ind, 7/10/77, died, 33. B.S, Ohio State, 98. Wells Co. Bank (Bluffton, Ind.), pres, 05-33. Ind. Acad. Sci. (pres, 18). Dragonflies.

WILLIHNGANZ, Eugene (Adrian), *Organic and physical chemistry.* Beaver Dam, Wis, 3/24/03; m. 35, c. 2. B.S, Notre Dame, 24, M.S, 25; Ph.D, Pa. State Col, 34. Natl. Lead Co, 35-45; Natl. Battery Co, dir. res, 45-.

WILLIS, James M., *Chemical engineering.* Akron, O, 3/23/18; m. 46. B.S, Purdue, 39, Ph.D, 42. Firestone Tire & Rubber Co, sr. chem, 45-.

WILLMAN, H(arold) B(owen), *Geology.* Newcastle, Ind, 7/30/01; m. 31, c. 4. A.B, Illinois, 26, M.A, 28, Ph.D, 31. Ill. Geol. Surv, 27-.

WILLS, H(arry) M(errill), *Meteorology, Climatology.* Pittsboro, Ind, 3/2/82; m, c. 2. B.S, Dubuque, 28; M.A, Mich. State Col, 38. U. S. Weather Bur, dir. Mich. sect, 06-48.

WILLS, Irvin A(ndrews), *Zoology.* Mendota, Ill, 12/21/04. B.S, Wheaton Col. (Ill.), 27; M.S, Iowa, 32, Ph.D, 35. Valparaiso, instr, 27-29; John Brown, prof, 35-.

WILLSON, Stuart D., *Organic chemistry.* Ft. Wayne, Ind, 8/15/07. A.B, Olivet Col. (Mich.), 31; Ph.D, Iowa State Col, 41. Am. Cyanamid Co, 42-.

WILMORE, Jno. (John) J(enkins), *Mechanical engineering.* Winchester, Ind, 10/15/64, died, 43. B.M.E, Purdue, 88, M.E, 91. Ala. Poly. Inst, 91-33, prof, 94-08, dean sch. eng, 08-33.

WILSON, A(lexander) M(assey), *Electrical engineering.* Stranraer, Scotland, 8/31/76. B.S, Purdue, 01, M.E, 03. Purdue, instr, 01-04; Cincinnati, prof, 11-.

WILSON, C(arroll) J(ohn), *Chemistry.* Grand Rapids, Mich, 2/23/10. B.S, Notre Dame, 31, M.S, 34, Ph.D, 35. Notre Dame, asst. prof, 32-35; Standard Oil Develop. Co, 35-43; R. T. Vanderbilt Co, 43-.

WILSON, C(harles) E(arl), *Entomology.* Brazil, Ind, 8/17/90; m. 19, c. 4. A.B, M.A, Indiana, 12. Nebr. State Teachers Col. (Wayne), prof, 25-36.

WILSON, Christopher L(umley), *Chemistry.* Leeds, Eng, 8/31/09; m. 37, c. 3. B.Sc, Leeds (Eng.), 30; Ph.D, London, 32; D.Sc, 39. Notre Dame, prof, 46-48; Ohio State, 48-.

WILSON, E(arl) O., *Chemistry, Chemical engineering.* Newton, Mich, 9/11/90; m. 17, c. 2. A.B, Hillsdale Col, 14; B.S, Purdue, 21; M.S, Mass. Inst. Tech, 28, Sc.D, 35. Yenching (China), prof, 21-41.

WILSON, Guy West, *Botany, Mycology.* Hamilton Co, Ind, 6/19/77; m. 02. B.Sc, DePauw, 02, A.M, 03; M.Sc, Purdue, 06. Upper Iowa, 07-10, prof, 19-27; Penn Col. (Ia.), 27-30.

WILSON, Henry S(pence), *Inorganic chemistry.* Louisville, Ky, 3/1/02. A.B, Indiana, 23, A.M, 27, Ph.D, 38. Louisville Munic. Col, instr. to prof, 31-.

WILSON, Ira T(emplin), *Zoology.* Jonesboro, Ind, 1/29/95; m. 18, c. 3. A.B, Indiana, 19, A.M, 21, Ph.D, 23. Heidelberg Col. (O.), prof, 23-. Varves in glacial clays.

WILSON, J(ames) F(rench), *Animal husbandry.* Stewartsville, Ind, 8/14/92; m. 19, c. 4. B.S, Wyoming, 13, M.A, Missouri, 16. California, 19-, prof, 40-.

WILSON, John L(ewis), *Chemistry.* Poland, Ind, 6/27/98; m. 35. A.B, Jamestown Col, 20, B.S, 25; M.A, Michigan, 24; M.S, Oregon, 27; Ph.D, Minnesota, 33. Economics Lab, dir. res, 31-.

WILSON, J(ohn) Walter, *Dermatology.* Rushville, Ind, 8/22/03; m. 32, c. 3. A.B, South. California, 29; M.D, California, 32. South. California, asst. prof, 45-.

WILSON, M(ark) Curtis, *Entomology.* Ware, Mass, 9/19/21. B.S, Massachusetts, 44; M.S, Ohio State, 46. Purdue, exp. sta, 47-.

WILSON, Robert E(rastus), *Chemistry* (starred). Beaver Falls, Pa, 3/19/93; m. 16, c. 3. Ph.B, Wooster, 14; B.S, Mass. Inst. Tech, 16. Standard Oil Co. Ind, 22-, dir. res, 22-34, v. p. etc, 34-, ch. exec. off, 45-. Natl. Acad. Sci. Petroleum cracking.

WILSON, Roy R(ussel), *Chemical engineering.* St. Charles, Mich, 10/8/99; m. 30, c. 2. B.S, M.S, Michigan, 22, Ph.D, 34. Standard Oil Co. Ind, 25-, asst. supt. heavy oils div, 43-.

WILSON, Thomas R(andall) C(arson), *Engineering.* Vernon, Ind, 10/23/84; m. 20, c. 1. B.S, Purdue, 09, C.E, 20. U. S. Forest Serv, forest prods. lab, 10-46.

WINANS, Charles F(rancis), *Organic chemistry.* Evansville, Ind, 4/17/08; m. 33, c. 2. B.S, Akron, 29; Ph.D, Wisconsin, 33. Koppers Co, 42-, mgr. chem. div, 47-.

WINDLE, W(illiam) F(rederick), *Anatomy* (starred). Huntington, Ind, 10/10/98. B.S, Denison, 21; M.S, Northwestern, 23, Ph.D, 26. Northwestern, 23-, prof, 35-.

WINN, Grant S(aunders), *Biochemistry.* Salt Lake City, Ut, 2/28/11; m. 35, c. 3. B.A, Utah, 33, M.A, 35; Ph.D, Purdue, 40. Am. Smelting & Ref. Co, 47-.

WINNEK, Philip S(tanley), *Chemotherapy.* San Diego, Calif, 3/19/08, died, 48. A.B, Stanford, 31; Ph.D, California, 35. Pitman-Moore Co. (Indianapolis), dir. res, 43-48.

WINTER, John E., *Psychology.* Holland, Mich, 2/28/78. A.B, Hope Col, 02; A.B, Michigan, 06, A.M, 10, Ph.D, 17. Goshen Col, prof, 13-15; West Virginia, 21-.

WINTER, Norman L(eon), *Electronics.* Mitchell, S. Dak, 7/10/06; m. 34. B.E, Purdue, 26. Gen. Elec. (Ind.), 30-36.

WIRT, S(imon) Edgar, *Psychology.* Des Moines, Ia, 2/25/07; m. 38. A.B, Denver, 28, M.A, 30; Ph.D, Purdue, 42. Purdue, 42-, assoc. prof, 45-.

WISCHMEYER, Carl, *Mechanical engineering.* Louisville, Ky, 8/8/84; m. 12, c. 2. B.S, Rose Poly. Inst, 06, M.S, 10, M.E, 20. Rose, 08-48, prof, 23-, v. p, 37-48.

WISCHMEYER, Carl R(iehle), *Electrical engineering.* Terre Haute, Ind, 10/2/16; m. 45, c. 2. B.S, Rose Poly Inst, 37; M.Eng, Yale, 39. Rice Inst, asst. prof, 47-.

WISE, John Kenneth, *Chemistry.* Shelby, O, 11/3/12; m. 39. A.B, DePauw, 33. Armstrong Cork Co. (Pa.), res, 34-40; U. S. Gypsum Co, asst. res. mgr, 40-.

WISEMAN, Bruce K(enneth), *Medicine.* South Bend, Ind, 3/1/97; m. 21. B.S, Indiana, 26, M.D, 28. Ohio State, 31-, prof, 36-.

WISLER, C(hester) O(wen), *Hydraulic engineering.* Nappanee, Ind, 2/25/81; m. 07, c. 3. B.C.E, Michigan, 13, M.S.E, 15. Michigan, 20-, prof, 31-.

WISSLER, Clark, *Anthropology* (starred), *Psychology.* Wayne Co, Ind, 9/18/70, died, 47. A.B, Indiana, 97, A.M, 99; Ph.D, Columbia, 01. Am. Museum Nat. Hist, 05-37, anthrop, 07-37; Yale, Inst. Human Relations, prof, 24-37. Natl. Acad. Sci; Anthrop. Assn. (pres, 19). American Indian; man and culture; the relation of nature to man.

WISSLER, Robert W(illiam), *Pathology.* Richmond, Ind, 3/1/17; m. 40, c. 4. A.B, Earlham Col, 39; M.S, Chicago, 43, Ph.D, 46, M.D, 48. Chicago, 43-, asst. prof, 46-.

WISSLER, Stanley G(ebhart), *Geology.* N. Y. C, 3/31/00; m. 26, c. 3. B.S, Earlham Col, 22; M.A, Columbia, 23. Union Oil Co. Calif, ch. paleontol, 35-.

WISSLER, W(illiam) A(rthur), *Metallurgy.* Richmond, Ind, 4/27/92; m. 17, c. 3. A.B, Indiana, 13, A.M, 14. Haynes Stellite Co. (Kokomo, Ind.), 17-23; Union Carbide & Carbon Corp, 23-.

WITHAM, W(illiam) Clifford, *Chemical engineering.* Hoisington, Kans, 3/8/03; m. 26, c. 2. B.S, Purdue, 24; A.M, Columbia, 29, Ph.D, 34. North. Ind. Gas & Elec. Co, 24-26; Sun Oil Co, 38-.

WITHNER, Carl L(eslie), Jr, *Plant physiology.* Indianapolis, Ind, 3/3/18; m. 41, c. 1. B.A, Illinois, 41; M.S, Yale, 43, Ph.D, 48. Brooklyn Col, instr, 48-.

WITHROW, Alice P(hillips), *Plant physiology.* Louisville, Ky, 9/5/07; m. 31, c. 1. A.B, Butler, 29; M.A, Cincinnati, 30; Ph.D, Purdue, 42. Purdue, asst. prof, 43-49; Smithsonian Inst, 49-.

WITHROW, Robert B(ruce), *Biophysics.* Wyoming, O, 6/8/04; m. 31, c. 1. E.E, Cincinnati, 27, M.S, 28; Ph.D, Chicago, 43. Purdue, res. assoc, 31-43, assoc. prof, 43-48; Smithsonian Inst, 48-.

WITMAN, E(ugene) D(eWald), *Agricultural chemistry.* New Albany, Ind, 9/21/10; m. 38, c. 1. A.B, Ohio State, 35, Ph.D, 39. Ohio State, 39-47, lect. insecticide chem, 40-47; Sherwin-Williams Co, asst. dir, 47-.

WITMER, S(amuel) W(enger), *Botany.* Farmersville, Pa, 12/25/88; m. 16, c. 1. B.A, Goshen Col, 14; M.A, Wisconsin, 15; Ph.D, Indiana, 35. Goshen Col, prof, 15-.

WITT, J(oshua) C(hitwood), *Chemical engineering.* Connersville, Ind, 8/5/84; m. 18. A.B, Butler, 08; S.B, Chicago, 08; Ph.D, Pittsburgh, 15; B.S, Armour Inst. Tech, 34, M.E, 35. Universal Atlas Cement Co, dir. res, 24-39; Marquette Cement Mfg. Co, tech. dir, 39-.

WITTCOFF, Harold, *Chemistry.* Marion, Ind, 7/3/18. A.B, DePauw, 40; Ph.D, Northwestern, 43. Gen. Mills, 43-.

WITTHOFT, Herbert C(ampbell), *Electrical engineering.* St. Anne, Ill, 8/6/11; m. 41, c. 2. B.S, Purdue, 33, M.S, 35. Anaconda Wire & Cable Co. (Marion, Ind.), 35-, tech. dir, 49-.

WITTY, Paul A(ndrew), *Psychology.* Terre Haute, Ind, 7/23/98. A.B, Ind. State Teachers Col, 20; M.A, Columbia, 23, Ph.D, 31. Northwestern, dir. psychoeduc. clinic, 30-.

WOERTZ, Byron B., *Chemical engineering.* Crandall, Ind, 9/20/13; m. 40, c. 2. B.S, Louisville, 33; Sc.D, Mass. Inst. Tech, 39. Pure Oil Co, 41-.

WOHLSCHLAG, Donald Eugene, *Biology.* Bucyrus, O, 11/6/18; m. 43, c. 1. B.S, Heidelberg Col, 40; Ph.D, Indiana, 49. Stanford, asst. prof, 49-.

WOLF, G(eorge) M(axwell), *Organic chemistry.* Port Clinton, O, 3/18/15; m. 44. B.Ch.E, Notre Dame, 36, M.S, 39, Ph.D, 40. Sharples Chem, Inc, 43-.

WOLF, H. Comer, *Engineering.* Indianapolis, Ind, 12/29/88; m. U. S. A, Field Army Sch, 09-17; War Prod. Bd, 37-46.

WOLF, Joseph E(dward), *Chemical engineering.* Erie, Pa, 3/6/19; m. 47, c. 2. B.Ch.E, Detroit, 42; M.S, Carnegie Inst. Tech, 43. Standard Oil Co. Ind, 43-.

WOLF, Mark A(dam), *Bacteriology.* Phoneton, O, 6/25/15; m. 37, c. 3. B.S, Purdue, 37; M.S, Wisconsin, 39. Dow Chem. Co, agr. chem, 42-.

WOLFE, Harold E(ichholtz), *Mathematics.* North Manchester, Ind, 6/6/91; m. 31, c. 1. A.B, Indiana, 13, A.M, 14, Ph.D, 18. Indiana, 19-, assoc. prof, 30-.

WOLFE, Kathryn M(atilda), *Chemistry.* Fremont, O, 4/25/96. A.B, Kansas, 24, M.A, 26; Ph.D, Ohio State, 38. St. Mary-of-the-Woods (Ind.), head dept, 43-44; Commercial Solvents Corp. (Terre Haute), 44-45; Eli Lilly & Co, res. co-ordinator, 45-48.

WOLFF, J(ohn) Edward, *Pharmacy.* Troy, N. Y, 2/29/16; m. 41, c. 1. Ph.C, Albany Col. Phar, Union Col. (N. Y.), 37, B.S, 39; Ph.D, Purdue, 45. Sharp & Dohme, Inc, 46-.

WOLFORD, Donovan Semler, *Mechanical engineering.* Indianapolis, Ind, 6/5/12. B.M.E, Ohio State, 34. Am. Rolling Mill Co. (Middletown, O.), res. eng, 36-.

WOLNAK, Bernard, *Chemistry.* Chicago, Ill, 12/30/18; m. 43, c. 1. B.S, Chicago, 39; Ph.D, Indiana, 43. Miner Labs, 46-.

WOOD, Alphonso, *Botany.* 1810. Author of an early manual of plants of northeastern U. S. Pres, Terre Haute Female Col, for several years, 1850-60.

WOOD, A(lbert) G(erard), *Plant physiology.* Waynetown, Ind, 1/20/81; m. 10, c. 1. B.S, Valparaiso, 04; A.B, Indiana 08; A.M, Nebraska, 16. Grove City Col, prof, 27-.

WOOD, Frederick Starr, *Chemical engineering.* Redding, Conn, 11/21/21; m. 47. B.Ch.E, Virginia, 43. Standard Oil Co. Ind, group leader, res, 44-.

WOOD, Fredrick, *Mathematics.* Zionsville, Ind, 12/7/89; m. 18, c. 2. B.A, Wisconsin, 15, M.A, 16, Ph.D, 23. Nevada, 32-, dean, 38-.

WOOD, G(regory) Burton, *Agricultural economics.* Medford, Ore, 12/26/09; m. 35, c. 1. B.S, Oregon, 35; M.S, Ore. State Col, 40; Ph.D, Wisconsin, 44. Purdue, assoc. prof, 44-.

WOOD, Harold Sinclair, *Chemical engineering.* Washington, D. C, 8/4/22. B.Ch.E, Cornell, 44. Standard Oil Co. Ind, 44-.

WOOD, Willard L., *Bacteriology.* Zionsville, Ind, 3/21/95. A.B, Ind. State Nor. Col, 20; M.S, Chicago, 25, M.D, Rush, 30. Rush, asst. clin. prof, 40-.

WOODBURN, J(ames), *Physics.* Dalton, England, 3/27/14, nat, 34; m. 42. B.S, Purdue, 38; Dr.Eng, Hopkins, 47. Rice Inst, chm. dept, 48-.

WOODBURN, James G(elston), *Hydraulic engineering.* Bloomington, Ind, 11/30/94; m. 23, c. 2. A.B, Indiana, 15, A.M, 16; B.S, Purdue, 18, Ph.D, Michigan, 29. Wisconsin, prof, 37-.

WOODBURY, C(harles) G(oodrich), *Horticulture.* Portland, Mich, 4/30/84; m. 09, c. 3. B.S, Mich. State Col, 04, M.S, 06; hon. Sc.D, Purdue, 37. Purdue, dir. exp. sta, 17-20, asst. prof, 09-11, head dept, 11-17.

WOODBURY, E(lton) N(orris), *Entomology.* Beverly, Mass, 12/7/13; m. 39, c. 2. A.B, Ohio Wesleyan, 36; Ph.D, Ohio State, 39. Purdue, 39-42; Hercules Powder Co, 43-.

WOODRUFF, Albert E(arl), *Physics.* Miltonvale, Kans, 7/22/90; m. 21. B.S, Kans. State Teachers Col, 17; M.S, Chicago, 19, Ph.D, 24. Butler, assoc. prof, 19-21; Automatic Elec. Co, 25-, dir. res, 47-.

WOODRUFF, Nathan H(aggard), *Organic chemistry.* Pleasant View, Tenn, 4/13/13. A.B, Vanderbilt, 34; A.M, Peabody Col, 35, Ph.D, 39. Ball State Teachers Col, 40-43; Westminster Col. (Mo.), prof, 43-.

WOODS, John T(idball), *Analytical chemistry.* Carroll Co, O, 4/22/15; m. 42, c. 2. B.S, Mt. Union Col, 37; M.S, Purdue, 39, Ph.D, 41. Am. Cyanamid Co, 41-, asst. ch. res. sect, 47-.

WOODS, Kenneth B(rady), *Highway engineering.* Sunnyside, Wash, 8/14/05; m. 30, c. 3. B.C.E, Ohio State, 32, C.E, 37. Purdue, prof, and assoc. dir. hwy. res. labs, 39-.

WOODS, Loren P(aul), *Ichthyology.* Poseyville, Ind, 8/4/13; m. 37, c. 2. A.B, Earlham Col, 36. U. S. Natl. Museum (Wash, D. C.), 41-47; Museum Nat. Hist. (Chicago), curator, 47-.

WOODSONE, Gilbert L(lewellyn), *Biology.* Curwensville, Pa, 2/9/09; m. 34, c. 2. A.B, DePauw, 32; M.A, Harvard, 33, Ph.D, 36. Massachusetts, prof, 46-, dean grad. sch, 50-.

WOODSIDE, Robert A(yres), *Optics.* Greencastle, Ind, 10/16/11. B.S, Purdue, 35, M.S, 37; Ph.D, Rensselaer Poly Inst, 42. Eastman Kodak, 42-.

WOODY, Clifford, *Education.* Thorntown, Ind, 6/2/84, died, 48. A.B, Indiana, 08, A.M, 13; Ph.D, Columbia, 16. Ind. high schs, 08-12; Michigan, prof. and res, 21-48.

WOOLPERT, Oram C(lark), *Bacteriology.* Kokomo, Ind, 12/7/97; m. 25, c. 2. A.B, Harvard, 22; Ph.D, Chicago, 33, M.D, Rush, 34. Camp Detrick, dir. biol. dept, 46-.

WOOTON, E(lmer) O(ttis), *Biology.* Kokomo, Ind, 9/19/65. B.S, Earlham Col, 89, A.M, 96. N. Mex. Col, 90-11; U. S. Dept. Agr, 11-37.

WORDEN, John L(orimer), Jr, *Zoology.* South Bend, Ind, 12/11/07; m. 33, c. 4. B.S, Notre Dame, 28; M.S, St. Bonaventure Col, 35. St. Bonaventure, prof, 33-.

WORRELL, Lee (Frank), *Pharmaceutical chemistry.* Orleans, Ind, 2/27/13; m. 34, c. 1. B.S, Purdue, 35, Ph.D, 40. Michigan, 42-, assoc. prof, 49-.

WORSTALL, Robert A(rthur), *Chemistry.* Zanesville, O, 4/18/75; m. 03. B.S, Case Sch. Appl. Sci, 97, M.S, 98. Purdue, instr, 97-00; consult, varnish develop, 08-.

WORZELLA, Wallace W(illiam), *Agronomy.* Plover, Wis, 10/25/06. B.S.A, Wisconsin, 29; M.S, Purdue, 31, Ph.D, 34. Purdue, exp. sta, 29-43; S. Dak. State Col, head dept, 43-.

WRAY, Robert I(som), *Chemistry, Chemical engineering.* Shelbyville, Ind, 5/14/95; m. 23, c. 1. A.B, DePauw, 17; B.S, Purdue, 22, Ch.E, 26. Aluminum Co. Am, 22-.

WRIGHT, Edward R(ay), *Analytical chemistry.* Cleveland, O, 4/27/12; m. 35, c. 2. B.S.Ch.E, Purdue, 33, M.S, 35, Ph.D, 37. Dow Chem. Co, 37-, dir. anal. lab, 40-.

WRIGHT, H(arry) N(oble), *Mathematics.* Shelbyville, Ind, 10/3/81; m. 04, c. 1. B.S, Earlham Col, 04; M.S, California, 11, Ph.D, 13. Earlham Col, dean, 24-30; City Col. N. Y, 31-, prof, 32-, pres, 41-.

WRIGHT, H(arvey) A(ustice), *Mathematics.* Fairmount, Ind, 1/17/83; m. 12, c. 2. A.B, Pacific Col, 10; A.B, Earlham Col, 13; M.S, Iowa, 25; Ph.D, N. Y. U, 32. Transylvania Col, prof, 32-.

WRIGHT, John S(hepard), *Botany, Pharmacognosy.* Clermont, Ind, 10/17/70; m. 01. B.S, Purdue, 92, LL.D, 40. Eli Lilly & Co, 92-, botanist, 92-04, dir. advertis, 04-37, dir, 37-. Ind. Acad. Sci. (sec, 94-04; pres, 04; trustee, 37-). Medical botany; histology of drugs and foods; pharmacology of plant drugs.

WRIGHT, Jonathan W(illiam), *Forest Genetics.* Spokane, Wash, 6/29/16; m. 40, c. 1. B.S, Idaho, 38; M.F, Harvard, 39, A.M, 41, Ph.D, 42. Purdue, instr, 42-45; U. S. Forest Serv, exp. sta, 46-.

WRIGHT, Wilbur. Near Millville, Ind, 4/16/67, died, 12. Co-inventor with his brother of airplane; first successful airplane flight, 12/17/03.

WUNDERLY, Harry L(eo), *Organic chemistry.* Pittsburgh, Pa, 8/7/11; m. 43, c. 2. B.S, St. Vincent Col, 34; M.S, Notre Dame, 35, Ph.D, 37. Gen. Tire & Rubber Co, 46-.

WYANT, Robert Kriss, *Geology.* Thorntown, Ind, 7/21/18; m. 46. B.S, New Mexico, 40. Kingsbury Ordnance Plant (Ind.), 41-45; Chicago Nat. Hist. Museum, 47-.

WYGANT, Noel D(arwin), *Forest entomology.* Roanoke, Ind, 4/18/08; m. B.S.F, Purdue, 32; Ph.D, Syracuse, 40. Colo. A. & M. Col, 46-.

WYLIE, Theophilus Adam, *Chemistry.* Philadelphia, Pa, 10/8/1810, died, 95. A.B, A.M, Pennsylvania, 30. Indiana, prof, 37-52, 55-86. Author of *Indiana University, Its History from 1820-1890.*

WYNKOOP, Raymond, *Chemical engineering.* Bethayres, Pa, 8/3/16; m. 42. B.S, Worcester Poly. Inst, 42; Ph.D, Princeton, 48. Standard Oil Co. Ind, 48-.

WYNN, Frank Barbour, *Medicine.* Springfield, Bartholomew Co, Ind, 1860, died, 21. A.B, DePauw, 83. Practiced (Indianapolis), 93-21. His medical exhibits greatly stimulated research among physicians.

WYSS, Arthur P(aul), *Chemistry.* Johnstown, Colo, 6/7/06. Ph.C, Colorado, 27, B.S, 28, M.S, 31, Ph.D, 35. Indianapolis Col. Phar, prof, 35-37; Buffalo, assoc. prof. phar, 41-43, prof, 43-.

YAEGER, Luther Lamaster, *Chemical engineering.* Brazil, Ind, 11/7/17; m. 43, c. 2. B.S, Rose Poly. Inst, 39. Bjorksten Res. Labs, 46-.

YALMAN, Richard G(eorge), *Chemistry.* Indianapolis, Ind, 4/16/23; m. 44, c. 1. B.S, Harvard, 43, M.A, 47, Ph.D, 49. Mound Lab, 48-.

YARBROUGH, H(enry) M(arcus), *Mathematics.* Farmington, Ky, 1/4/84; m. 17, c. 3. A.B, Indiana, 16, A.M, 25, Ph.D, 30. West. Ky. State Teachers Col. (Bowling Green), 15-.

YEAGER, Edgar L(ee), *Psychology.* Mauckport, Ind, 5/29/98. A.B, Indiana, 23, A.M, 24. Indiana, 25-45, asst. prof, 27-45.

YEARIAN, H(ubert) J(ose), *Physics.* San Jose, Calif, 6/17/05; m. 30, c. 2. B.S, Oregon, 27, M.S, 29; Ph.D, Purdue, 34. Purdue, prof, 38-.

YEOMAN, Frederick Albert, *Organic chemistry.* Elkhart, Ind, 8/31/17; m. 44, c. 1. B.S, Illinois, 39; Ph.D, Iowa State Col, 44. Westinghouse Elec, 44-.

YODER, Lester, *Chemistry.* Stuttgart, Ark, 6/27/92; m. 19, c. 3. B.S.A, Purdue, 16, M.S, 17. Iowa State Col. exp. sta, 25-.

YODER, P(eter), *Chemistry.* Shipshewana, Ind, 8/21/67, died, 29. A.B, Indiana, 94, A.M, 96; Ph.D, Gottingen, 01. Indiana, instr, 94-96; U. S. Dept. Agr, 10-29, sugar cane technol, 13-29.

YORK, Harlan H(arvey), *Forest pathology.* Plainfield, Ind, 9/8/75. B.S, DePauw, 03; A.M, Ohio State, 05; Ph.D, Hopkins, 11. Conservation Comn, Albany, 23-29; Pennsylvania, prof, 30-.

YOUNG, A(lmon) P(aul), *Mechanical engineering.* Lagrange, Ind, 12/27/93; m. 21, c. 1. B.S, Purdue, 17. Gen. Elec. (Ind.), 18-21; Ross Gear & Tool Co. (Ind.), 27-29; Mich. Col. Min. and Tech, assoc. prof, 30-.

YOUNG, A(rcher) E(verett), *Mathematics.* Haddam Neck, Conn, 3/12/73. A.B, Wesleyan, 98; Ph.D, Princeton, 03. Purdue, instr, 03-08; Miami, prof, 08-.

YOUNG, Charles A(lbert), *Organic chemistry.* Dodge Center, Minn, 10/11/11. B.S, Purdue, 33; M.S, Notre Dame, 34, Ph.D, 36. Dupont Co, Jackson Lab, 36-.

YOUNG, Eldred E(msly), *Organic chemistry.* Great Falls, Mont, 2/5/18. B.Sc, Notre Dame, 40, M.Sc, 41, Ph.D, 43. Shell Oil Co, 46-.

YOUNG, E(rnest) C(harles), *Agricultural economics.* Grove City, Pa, 9/29/92; m. 18, c. 2. B.S, Grove City Col, 14; Ph.D, Cornell, 21. Purdue, 21-, prof, 27-42, dean grad. sch, 42-. Farm Econ. Assn. (pres, 38).

YOUNG, Frank N(elson), *Biology.* Oneonta, Ala, 11/2/15; m. 43, c. 2. B.S, Florida, 38, M.S, 40, Ph.D, 42. Indiana, asst. prof, 49-.

YOUNG, Gail S(ellers), Jr, *Mathematics.* Chicago, Ill, 10/3/15; m. 34, c. 1. B.A, Texas, 39, Ph.D, 42. Purdue, 42-47, asst. prof, 46-47; Michigan, 47-.

YOUNG, G(ilbert) A(mos), *Mechanical engineering.* Owosso, Mich, 6/24/72, died, 43. B.S, S. Dak. Col, 94; B.S, Purdue, 99, M.E, 03; M.M.E, Harvard, 10. Purdue, 99-, prof, 10-43.

YOUNG, J(ames) H(enry), *Chemistry.* Asheville, N. C, 1/8/99; m. 21, c. 3. A.B, Marion Col, 26; M.A, Indiana, 30, Ph.D, 38. Marion Col, asst. prof. biol. sci, 31-34; Anaconda Wire & Cable Co. (Marion, Ind.), res. chem 41-.

YOUNG, J(esse) Emmert, *Biology.* Smithville, O, 10/27/05; m. 29, c. 3. A.B, Manchester Col, 30; M.S, Purdue, 34, Ph.D, 39. Ind. high schs, 30-33; Purdue, instr, 34-39; Ill. State Normal, assoc. prof, 39-48.

YOUNG, Otis B(igelow), *Physics.* Dodge Center, Minn, 11/17/99; m. 29, c. 2. A.B, Wabash Col, 21; A.M, Illinois, 23, Ph.D, 28. South. Illinois, 28-, prof, 44-.

YOUNG, Paul A(llen), *Plant pathology.* Concordia, Kans, 5/31/98; m. 28, c. 1. A.B, Wabash Col, 21; A.M, Illinois, 23, Ph.D, 25. A. & M. Col. (Tex.), exp. sta, tomato disease lab, 35-.

YOUNG, T(homas) W(ilbur), *Horticulture.* Washington, Ind, 11/26/05; m. 37. B.S, Purdue, 30; M.S, Florida, 34; Ph.D, Cornell, 42. Florida, citrus exp. sta, 42-.

YOUNG, Vincent Willard, *Mechanical engineering.* Michigan City, Ind, 8/21/92; m. 16, c. 1. B.S, Purdue, 14, M.S, 28. Michigan City Lumber & Coal Co, 15-18; Purdue, instr, 25-29; Okla. A. & M. Col, assoc. prof, 29-, prof, 37-.

YOUNG, Wilfred B., *Animal husbandry.* Frankfort, Ind, 5/15/03; m. 26, c. 3. B.S.A, Purdue, 25, hon. Dr.Agr, 48; M.S, Illinois, 30. Connecticut, 31-, assoc. prof, 41-47, dir. exp. sta, 45-, dean col. agr, 45-.

YOUNGS, J(ohn) W(illiam) T(heodore), *Mathematics.* Bilaspur, India, 8/21/10, U. S. cit; m. 38, c. 2. B.S, Wheaton Col, 30; M.A, Ohio State, 31, Ph.D, 34. Purdue, 41-46, asst. prof, 42-46; Indiana, 46-, prof, 48-.

YOUTZ, Merrill A(rthur), *Organic chemistry.* Indianola, Ia, 12/9/94; m. 21, c. 4. A.B, Lawrence Col, 16; S.M, Mass. Inst. Tech, 21, Ph.D, 22. Standard Oil Co. Ind, 23-30; Battelle Mem. Inst, res, 45-.

YU, Greta Yee-Tak, *Physics.* Canton, China, 1/12/17. B.S, Natl. Sun Yat-Sen U, 36; M.S, Illinois, 40; Ph.D, Cincinnati, 43. Naval Ordnance Plant (Indianapolis), 45-.

YUNCKER, T(ruman) G(eorge), *Botany.* Carson City, Mich, 3/20/91; m. 15, c. 2. B.Sc, Mich. State Col, 14; A.M, Nebraska, 15; Ph.D, Illinois, 19. DePauw, 19-, prof, 21-. Ind. Acad. Sci. (pres, 39).

ZAHM, A(lbert) F(rancis), *Physics.* New Lexington, O. A.M, Notre Dame, 85, LL.D, 17; M.E, Cornell, 92; Ph.D, Hopkins, 98. Notre Dame, prof, 85-92; U. S. N, dir. aerodynamical lab, 17-29; retired.

ZEBROWSKI, George, *Parasitology.* Warsaw, Poland, 11/27/95, U. S. cit; m. 22, c. 1. B.S, Purdue, 21, M.S, 23; J.D, Chicago Col. Law, 37. Villanova Col, prof, 23-29; city chem. and bact, Hammond, Ind.

ZEHRING, W(illiam) A(rthur), *Mathematics.* Germantown, O, 12/6/76, died, 31. A.B, Otterbein, 98, A.M, 03; A.B, Harvard, 03. Purdue, assoc. prof, 05-31.

ZEINER, Frederick N(eyer), *Endocrinology.* Finley, N. Dak, 3/20/17; m. 42. B.S, Denver, 38; Ph.D, Indiana, 42. Denver, asst. prof, 46-.

ZELENY, Charles, *Zoology* (starred). Hutchison, Minn, 9/17/78, died, 39; m. 11, c. 1. B.S, Minnesota, 98, M.S, 01; Ph.D, Chicago, 04. Indiana, asst. prof, 04-09; Illinois, prof, 09-39. Genetics.

ZELLE, M(ax) R(omaine), *Genetics.* Alleman, Ia, 10/11/15; m. 37. B.S, Iowa State Col, 37, Ph.D, 40. Purdue, asst. prof, 41-44; Cornell, prof. bact, 48-.

ZENER, Clarence (Melvin), *Physics.* Indianapolis, Ind, 12/1/05; m. 31, c. 5. A.B, Stanford, 26; Ph.D, Harvard, 29. Chicago, prof, 45-.

ZENER, Karl E(dward), *Psychology.* Indianapolis, Ind, 4/22/03. Ph.B, Chicago, 23; A.M, Harvard, 24, Ph.D, 26. Duke, 28-, prof, 44-.

ZERBE, Walter B(enjamin), *Oceanography.* St. Marys, O, 11/8/99; m. 27, c. 1. A.B, Indiana, 21. U. S. Coast & Geod. Surv, 26-, math, 26-42, ch. sect. tide invests, 42-45, sect. oceanog, 45-.

ZERFAS, L(eon) G(rotius), *Medicine, Biochemistry.* Frankfort, Ind, 3/7/97; m. 40, c. 6. B.S, Indiana, 20, M.D, 22; Ph.D, Cambridge, 41. Indiana, instr, 28-36, assoc. prof, 31-36.

ZIEGLER, A(rthur) W(illiam), *Botany.* Anderson, Ind, 6/27/17; m. 46, c. 1. A.B, North Carolina, 39, M.A, 41, Ph.D, 48. Florida, asst. prof, 48-.

ZIEGLER, Newell R(ichard), *Bacteriology, Immunology.* Bippus, Ind, 7/5/99; m. 22. B.S, Minnesota, 25, M.S, 26, M.B, M.D, 28, Ph.D, 30. Minnesota, assoc. prof, 47-.

ZIERER, Clifford M(aynard), *Geography.* Batesville, Ind, 7/4/98; m. 25, c. 2. A.B, Indiana, 22, A.M, 23; Ph.D, Chicago, 25. California L. A, 25-, prof, 45-.

ZIMMER, Ford C., *Chemistry.* Steuben Co, Ind, 8/10/95; m. 18, c. 1. B.S, Ch.E, Tri-State Col, 17. Gen. Elec. (Ft. Wayne), 19-49, chem, 24-49.

ZIMMERSCHIED, Wilford J(ohn), *Chemistry.* Pleasant Hill, Mo, 2/22/17; m. 44, c. 1. B.S, Monmouth Col, 41, M.S, Ohio State, 44, Ph.D, 46. Standard Oil Co. Ind, 45-.

ZINK, Norah E., *Geography.* Richmond, Ind. B.S, Utah, 24; A.M, Columbia, 26; Ph.D, Chicago, 37. Pa. State Teachers Col, 36-.

ZINSZER, Harvey A(lfred), *Physics, Astronomy.* Allentown, Pa, 7/2/86; m. 09, c. 6. A.B, Lehigh, 22, M.A, 24; Ph.D, Indiana, 26. Hanover Col, prof, 27-29; Ft. Hays Kans. State Col, prof, 29-.

ZINSZER, Richard H(oward), *Engineering*. Scranton, Pa, 8/15/10; m. 38, c. 2. A.B, Ft. Hays Kans. State Col, 31; B.S, Lehigh, 32; Ph.D, Indiana, 36. Union Oil Co. Calif, 37-.

ZIRKLE, Raymond E(lliott), *Experimental radiology, Plant physiology*. Springfield, Ill, 1/9/02; m. 24, c. 2. A.B, Missouri, 28, Ph.D, 32. Indiana, prof, 40-44; Chicago, prof, 44-.

ZISSON, James, *Chemistry*. Marlboro, Mass, 6/13/21. B.S, Northeastern, 43. Standard Oil Co. Ind, 46-, asst. personnel super, 48-.

ZOSS, A(braham) O(scar), *Organic chemistry*. South Bend, Ind, 2/17/17; m. 39, c. 3. B.S, Notre Dame, 38, M.S, 39, Ph.D, 41. Gen. Aniline & Film Corp, 41-.

ZSCHEILE, F(rederick) P(aul), Jr, *Plant physiology, Biochemistry*. Burlington, Kans, 5/11/07. B.S, California, 28, Ph.D, 31. Purdue, assoc. prof, 37-.

ZUCROW, M(aurice) J(oseph), *Engineering*. London, Eng, 12/15/99. B.S, Harvard, 22, M.S, 23; Ph.D, Purdue, 28. Purdue, 23-29; Aerojet Eng. Corp, 43-.

ZUFALL, C(halmers) J(oseph), *Pharmacy*. Frankfort, Ind, 5/1/85; m. 21, c. 2. B.S, Purdue, 07, M.S, 14; Ph.D, Wisconsin, 38. Eli Lilly & Co, 13-16; Purdue, asst. prof. to prof, 21-.

CHAPTER III

SUMMARIES AS TO CERTAIN SCIENCES AND INDIANA INSTITUTIONS

MATHEMATICS IN INDIANA

By Will E. Edington, DePauw University

In order to get a proper perspective of mathematics in Indiana, it is necessary to realize the chaotic condition of nineteenth-century education. Although Indiana University, Hanover College, Wabash College, and DePauw University were founded before 1840, there were no tax-supported schools to prepare students for college work until after 1867, and few before 1885. In 1867 the legislature passed a law enabling communities to set up tax-supported schools. Such preparatory schools as existed earlier were academies and seminaries established by church organizations or by individuals. All the colleges, however, provided preparatory training. Indiana University did not abolish its preparatory school until 1890, and it was about 1900 before DePauw and other Indiana colleges ceased to give this work.

Enrolment data throw much light on the conditions during the last century. Wabash College, for example, had an enrolment of 113 in 1837-38, of whom only 31 were doing college work. For years Franklin College never had more than 36 in its collegiate department. Wabash had a total of 143 alumni in 1861, twenty-nine years after its founding. The number of graduates from Indiana University did not total a thousand until 1875. In 1890 at DePauw the collegiate enrolment was 418, that at Indiana University 339, and that at Purdue, 238. The preparatory enrolments in 1890 were DePauw, 338, Indiana, 99, and Purdue, 111.

Several other factors influenced the amount of work done in mathematics during the earlier decades. First, practically all colleges required Latin and Greek both for admission and as college work. Wabash College, for example, required four years of Latin and two of Greek for the A.B. degree, in addition to the passing of an entrance examination in these classical studies. The A.B. and the B.S. degrees both required two years of mathematics and one year of physics, but the preparatory department was largely concerned with Latin and Greek. At Indiana University, it was 1873 before mathematics or science could be substituted, even in part, for Greek in the entrance qualification.

A second factor retarding work in mathematics was that it was taught chiefly as an aid to computation and surveying and to the understanding of natural science, especially astronomy. Astronomy was generally studied in the senior year, following some mechanics in the junior year. Little mathematics other than arithmetic was given anywhere in Indiana in the first half of the century. Practically the only textbooks in algebra, trigonometry and analytic geometry then available were translations and revisions of French textbooks. This situation prevailed throughout the United States until about 1875. In fact, until there were numerous high schools, about 1890, most colleges taught elementary algebra and plane and solid geometry as college subjects.

A third and dominant factor retarding mathematics was that practically all the early college teachers were trained for the ministry. Such professors might teach mathematics briefly and then teach Greek or some other subject entirely foreign to mathematics. The strictly professional mathematician did not exist in Indiana until after 1850. Indeed, the early scientists of Indiana were naturalists and scholars, not botanists, geologists, mathematicians, etc.

The first teacher of mathematics in Indiana to carry the title of professor of mathematics was John Hopkins Harney (1806-68). He was professor of mathematics, natural philosophy and astronomy at Indiana University from 1827 to 1832, when he went to Hanover for five years as professor of mathematics, natural and mechanical philosophy, and chemistry. Bishop Matthew Simpson (1811-84) taught the first courses in mathematics at DePauw. He was followed by William Clark Larrabee (1802-59), who later became the first state superintendent of public schools. John Steele Thomson (1804-43) was the first professor of mathematics at Wabash, 1834-43. The first professor of mathematics (and natural philosophy) at Franklin was Rev. John B. Tisdale, appointed in 1846. At his death a year later, he was succeeded by John S. Hougham (1821-94), who remained until 1863. Hougham later became the first professor at Purdue (1872).

At Hanover, S. Harrison Thomson served from 1844 to 1877 and Frank Lyford Morse from 1876 to 1900. DePauw honors John Price Durbin John, who taught mathematics from 1882 to 1889, when he became president. He had served as president of Brookville and Moores Hill Colleges before coming to DePauw. DePauw's second great teacher of mathematics was Wilbur Vincent Brown, who served from 1885 until his death in 1928. Indiana University's first outstanding teacher of mathematics was Daniel Kirkwood, appointed professor of mathematics and civil engineering in 1856, remaining for thirty years. He became one of America's leading astronomers, writing 129 articles, mostly on astronomy. Succeeding Kirkwood was Joseph Swain, who received the first M.A. in mathematics from Indiana University. Swain went to Stanford University in 1891 with David Starr Jordan, but returned to Indiana University as president in 1893, continuing until he went to Swarthmore College as president.

During the years 1891-96, four of Indiana's greatest teachers of mathematics became associated. Drs. Robert Judson Aley, Schuyler C. Davisson, Ulysses S. Hanna, and David A. Rothrock, all graduates of Indiana University, became its celebrated " Big Four " as teachers of mathematics. Davisson began his work in 1890, Aley in 1891, Rothrock in 1892, and Hanna in 1895. The group remained intact until 1909, when Aley became state superintendent of public instruction and soon thereafter president of the University of Maine—and still later president of Butler University. The other three remained at Indiana University until they reached retirement. The great teachers of mathematics at Wabash College were John L. Campbell, Jacob Norris, and Jasper Asaph Cragwall. Campbell began his work in 1849 and remained until his death in 1904, but in his later years he taught physics and astronomy, not mathematics. Norris was at Wabash from 1876 to 1891. Cragwall came to Wabash in 1900 and retired in 1929. One of the earliest professors of mathematics at Earlham College was Erastus Test, who later went to Purdue.

The first professor of mathematics at Purdue was William B. Morgan, who served one year, 1874-75. He was succeeded by David G. Herron, who served till 1883. Moses C. Stevens then taught mathematics, until he retired in 1902. Other great teachers at Purdue, who began their service there before 1900, were Thomas Greene Alford, who served 1892-1917; Erastus Test, 1889-1910; Alfred Monroe Kenyon, 1898-1921; and Clarence Abiathar Waldo, 1895-1908. Waldo was one of the three mathematicians in Indiana before 1900 who had a national reputation. He began his work in Indiana at the Rose Polytechnic Institute in 1883, where he served as acting president twice before he went to DePauw for four years as head of the department of mathematics.

The three mathematicians of national reputation before 1900—Henry Turner Eddy, Arthur Stafford Hathaway, and Waldo—served at the Rose Polytechnic Institute. Eddy was president from 1891 to 1894 and was one of thirteen Americans to present papers at the Mathematics Congress held at the Chicago World's Fair in 1893. Hathaway succeeded Waldo in 1891 and remained at Rose until retired (1920). He did considerable research and was active nationally in mathematics.

Indiana State Teachers College honors among its earlier prominent teachers, Oscar Lynn Kelso and Frank Rawdon Higgins. Other notable early teachers were E. N. Johnson of Butler University and E. D. Grant of Earlham College. However, the number of Indiana mathematicians who produced research before 1900 is very small. The first woman to become head of a department of mathematics in Indiana was Mrs. Lizzie S. Byers, who served in that capacity at the Indiana State Normal School from 1890 to 1893.

The last quarter of the nineteenth century saw a general quickening in the study of advanced mathematics throughout the United States. Johns Hopkins University was founded in 1876 primarily to encourage graduate study and research. The reorganization of the University of Chicago in 1892 was with the intention of making it primarily a graduate school. The first national mathematical organization, the American Mathematical Society, in 1891 succeeded the New York Mathematical Society founded in 1888. The *American Journal of Mathematics,* founded at Johns Hopkins University in 1878, was the first American mathematical research journal. The *Bulletin of the New York Mathematical Society,* later to become the *Bulletin of the American Mathematical Society,* began publication in 1891, and the *Transactions* of the *American Mathematical Society* first appeared in 1900. The *Annals of Mathematics* began publication in 1884. Finally, the *American Mathematical Monthly* first appeared in 1894.

Harvard University granted nine doctorates in mathematics in the last quarter of the nineteenth century; Johns Hopkins, 32; Yale, 18; Columbia, eight; Clark, 12; and the University of Chicago, 11.

In Indiana, so far as can be learned, the first non-honorary master's degree was given at Indiana University to Joseph Swain in 1885, and the second, in 1888, to Francis Preserved Leavenworth, who later became a prominent astronomer at the University of Minnesota. Indiana's first earned doctorate in mathematics was a doctor of science degree given in 1893 at Purdue to James Byrnie Shaw, who became one of the leading mathematicians in the country as a professor of mathematics at the University of Illinois. No other doctorates in mathematics were given in Indiana until after the coming of Robert D. Carmichael to Indiana University in 1910. Carmichael remained at Indiana five years, until he went to the University of Illinois, and during that period directed the work for the first two Ph.D. degrees in mathematics given in the state: to Cora B. Hennel in 1912 and to Thomas Edward Mason in 1914. Miss Hennel became an outstanding teacher at Indiana University and Mason attained a similar reputation at Purdue. Indiana University conferred no other doctorates in mathematics for a decade, until several were directed by Kenneth P. Williams and Harold T. Davis. Davis left Indiana in 1937 to become head of mathematics at Northwestern University.

Beginning in 1924 with the complete reorganization of graduate study, Purdue has been offering work leading to the doctorate, as has Notre Dame. Following World War I, American universities brought from Europe mathematicians of international reputation who have done much to develop research and direct graduate work in American universities. Purdue has had Wilhelm Maier, Cornelius Lanczos, and Arthur Rosenthal; Indiana University, H. F. Bohnenblust, Samuel Eilenberg, and Emil Artin; and Notre Dame, Karl Menger. Almost all of these men have now gone to universities in other states. The departments at both Indiana University and Purdue have been greatly strengthened recently, and the granting of doctorates is a definite policy. Several Indiana colleges also give graduate mathematics leading to the master's degree.

In 1900, mathematicians who had resided in the state and had published research of considerable merit were very few, the best known being Kirkwood, Eddy, Hathaway, Shaw, Aley, and Rothrock. Of a total membership of 337 in the American Mathematical Society, Indiana could claim only eleven as residents. In 1948 Indiana had 79 members in the Society out of a total membership of 3,805. The Mathematical Association of America was founded in 1916, and the Indiana Section organized in 1925. This Section meets at least annually and is affiliated with the Mathematics Section of the Indiana Academy of Science. In 1949, Indiana had 103 members in the Association out of a total membership of 3,748.

At the present time considerable mathematical research is being done in the state, papers are being published in American and foreign research magazines, and Indiana's future in mathematics appears bright. It is not the purpose of this brief history, however, to discuss living personalities or to evaluate research activities. It is the hope of the author to present in the future many of the interesting details here omitted.

ASTRONOMY IN INDIANA

With the aid of F. K. Edmondson, Indiana University

Indiana's large amount of cloudiness and its humid atmosphere, and the turbulence of the air associated with the low altitude and humid climate, limit astronomical studies. However, Indiana is the birthplace of five astronomers who have been starred in *American Men of Science* as especially distinguished in research: C. L. Doolittle, J. C. Duncan, J. A. Miller, E. C. Slipher, and V. M. Slipher. Indiana was also the scene of the college education of all these men but one, Doolittle. Three other starred astronomers graduated from Indiana schools of higher learning: J. A. Anderson, C. O. Lampland, and J. A. Parkhurst.

Although some astronomy was taught even a century ago at Wabash, DePauw, and Notre Dame, Indiana University has been pre-eminent in this field. Daniel Kirkwood, one of the country's chief astronomers in his time, was professor at Indiana University 1856-86. John A. Miller was professor 1896-1906, during which period four subsequently-starred astronomers were graduated.

Most of the colleges and universities of Indiana now teach at least an elementary course in astronomy, and there are observatories at DePauw, Earlham, and Hanover, as well as at Indiana. Butler University has the only Spitz planetarium in the state. However, Indiana is the only school in the state that offers considerable training. Recently it has had a staff of four professors and has been offering work leading to the doctorate.

The difficult climatic conditions in Indiana for the study of astronomy for many years discouraged development of facilities for detailed observations. However, the Goethe Link Observatory, built in 1937 by an Indianapolis man and given to Indiana University in 1947, now supplies relatively excellent facilities for several sorts of studies. Moreover, the climatic handicaps are partly offset by excellent opportunities now present to use more favorably situated observatories in other states. Hence, the future appears bright for those few persons who have the interests and the qualifications to become astronomers.

BOTANY AND BOTANISTS IN INDIANA

Of the scientists sketched in this volume, 168 characterize themselves as botanists. Fully 350 more are primarily botanists: seven are plant ecologists; 19, foresters; 37, horticulturists; 14, mycologists; 52, plant pathologists; 71, pharmacologists; 32, plant physiologists; and a considerable number of the 26 geneticists and the 79 biologists work with plants, as do all of the 95 bacteriologists.

A recent poll of members of the Indiana Academy of Science revealed that more are especially interested in the botany section than in any other. Of those who had been president of the Academy, 15 were botanists and three were bacteriologists.

Indiana has held an exceptionally high rank in botany for many years. John Merle Coulter, one of the leading botanists of his generation, taught at Hanover College 1874-79, and with Charles R. Barnes started the *Botanical Gazette,* for decades perhaps the leading botanical journal of the United States. During the years that Dr. Coulter was at Wabash College (1880-91), that institution was a leader, both as a botanical research center and in graduating men subsequently distinguished in botany. His successor there, Mason B. Thomas, also was able to attract and train men who later became distinguished. (For the list, see "Wabash College and Science.")

Purdue University for many years had the services of Stanley Coulter, brother of J. M., and of J. C. Arthur. These men did much to increase the appreciation of botany in Indiana. Dr. Coulter was highly influential in forest preservation and improvement, and Dr. Arthur was a world-renowned investigator of plant rusts. Purdue has also employed and trained many excellent horticulturists, plant pathologists, pharmacists, and bacteriologists.

Indiana University has had a strong department of botany for many decades, commencing during the presidency of David Starr Jordan. Professors Mottier, Andrews, and Weatherwax have been presidents of the Academy. Professor Weatherwax's prolonged studies of corn are widely respected, and Professor Cleland is world-renowned for his work in plant genetics.

DePauw University has had a succession of able men in botany: professors, and students later distinguished. Two professors have recently been presidents of the Academy. Of the persons who obtained Ph.D. degrees in botany in the United States 1936-45, 11 had obtained their college degrees from DePauw, nine from Butler, seven from Purdue, six from Indiana University, two from Notre Dame and Wabash, and one each from Hanover, Indiana State, and Manchester. In that decade, Indiana University granted nine doctorates, Purdue, five, and Notre Dame, three.

Butler University has had a strong department of botany since 1919, when R. C. Friesner joined the faculty. During recent decades many of the abler students have been attracted to botany, and a long list of alumni have become well-known botanists. (For the list see "Butler University's Contribution to Science.") A large amount of good botanical research has also been done at Butler by both faculty and advanced students.

Botany has been taught at all Indiana colleges for many decades. Partly as a result, there is widespread interest among citizens of the state in various aspects of plant studies. The knowledge of the flora of Indiana, that is, the name, number and distribution of the many species found in the state, is said to be greater than for any other state. This leadership had its roots in the pioneer studies of John M. and Stanley Coulter in the years 1874-1900. It reflects also the work of many later students widely scattered over the state. However, by common consent, chief credit for Indiana's enviable position today goes to Dr. C. C. Deam, in 1900 a business man with a hobby of collecting species of Indiana flora but later state forester, state botanist, and, after reaching 70, state research botanist. His *Flora of Indiana* (1940) is recognized as a classic.

Four aspects of botany especially studied in Indiana are (1) floristics, the description of species and their distribution; (2) ecology, the environmental relations of the plants; (3) the genetic evolution of the plants; and (4) the interrelations of plants, including pathology.

Natives of Indiana who have been starred in *American Men of Science* for research in botany are C. R. Barnes, H. L. Bolley, O. W. Caldwell, H. M. Fitzpatrick, R. B. Harvey, D. T. MacDougal, G. T. Moore, D. M. Mottier, E. W. Olive, J. N. Rose, J. R. Schramm, and H. H. Whetzel.

In addition to most of the foregoing native Hoosiers, Indiana graduated from its colleges starred botanists W. L. Bray, J. M. Coulter, Stanley Coulter, C. D. LaRue, L. D. Petry, and D. Reddick. Thus, Wabash College has six starred alumni (Moore, Olive, Reddick, Rose, Schramm, and Whetzel); Hanover College has three (Barnes and the Coulter brothers); and Indiana University has two (Bray and Mottier). Indiana colleges with one such alumnus are DePauw (MacDougal), Earlham (Petry), Franklin (Caldwell), Purdue (Bolley), and Valparaiso (LaRue).

Indiana college faculty members, past and present, sometime-starred in botany are: *DePauw,* M. T. Cook, L. M. Underwood; *Hanover,* J. M. Coulter; *Indiana U.,* D. H. Campbell, R. E. Cleland, D. M. Mottier; *Purdue,* J. C. Arthur, Barnes, Bolley, S. Coulter, M. E. Gardner, H. S. Jackson, J. S. Karling, F. D. Kern, MacDougal, E. B. Mains, C. R. Orton, Petry; and *Wabash,* J. M. Coulter, Rose, Thomas.

Indiana's high rank among the states with respect to botany and botanists reflects at least three conditions: (1) The state, though small and rather uniform in many respects, is so located that it includes parts of five contrasting types of flora. It has been characterized as a transition area. Partly because of its glacial history, several remnants of flora now characteristic elsewhere remain as relicts in Indiana. (2) Indiana was extensively peopled at a time in the history of our country when the flora were first beginning to be studied. It was on the frontier botanically for a significant period, the site of important discoveries and the home of several leaders in botanical research. For example, the first major American study of sequence plant ecology (on progressive changes in the flora), was of the sand dunes of northern Indiana. (3) The outstanding leadership of John Merle Coulter 1874-93 and of some of his students merits special mention. It is probable that Indiana's high rank in the yield of distinguished botanists is due to a considerable degree to this influence. (Although the Coulters were born in China, their parents came from Indiana and their grandfather was the founder of Hanover College.) David Starr Jordan's influence on botany's advancement in Indiana was appreciable, partly because of his own interest in plants but chiefly because of his effective encouragement of research and of talented men. He notably stimulated Dr. Coulter and selected him as his successor as president of Indiana University. In recent decades, the stimulating influences of C. C. Deam, state botanist, and of Ray C. Friesner at Butler and T. G. Yuncker at DePauw, with the aid of their staff members, have been significant.

THE STUDY OF THE INDIANA VASCULAR FLORA

By Ray C. Friesner, Butler University

The earliest scientific work on Indiana plants was done by travelling naturalists, including Andre Michaux (1795), Henrico M'Murtrie (1819), David Thomas (1819), Constantine Rafinesque (1820), John L. Riddell (1836), Prince Alexander Philip Maximilian (1839), and Alphonso Wood (1847).

Work on the vascular flora by Indiana residents began with the collections and studies of a physician, Dr. Asahel Clapp of New Albany, in 1852. Such work by vocational botanists was started by A. H. Young with the preparation of his manual of the botany of Jefferson County, published in 1871. Shortly thereafter, John M. Coulter, who taught at Hanover

College from 1874-79, commenced systematic studies. In 1878, Charles R. Barnes and John F. Baird published catalogs of the vascular plants of Jefferson and Clark counties.

The first comprehensive list of vascular plants of Indiana was compiled in 1881 by John M. Coulter, Charles R. Barnes, and Stanley Coulter. Numerous local and county lists appeared in succeeding years. Stanley Coulter published in 1900 a comprehensive catalog of the flowering plants and ferns and fern allies indigenous to Indiana, a compilation of all previous published lists.

About 1900 a young druggist of Bluffton, Charles C. Deam, began botanical work which took him into every township in the state and resulted in a private collection of more than 60,000 specimens. His studies have led him to publish *Trees of Indiana* (four editions, with a fifth in progress), *Shrubs of Indiana* (two editions), and *Grasses of Indiana,* and have culminated in a masterpiece of local flora literature, *Flora of Indiana* (1940; 1236 pp.). Largely because of Dr. Deam's efforts, Indiana became first in the nation in knowledge of its state flora.

Following the publication of *Flora of Indiana,* numerous workers have collaborated with Dr. Deam in preparing annual reports. Mentioned by him as especially helpful are A. R. Bechtel, R. C. Friesner, R. M. Kriebel, J. E. Potzger, Paul Weatherwax, Winona Welch, and T. G. Yuncker. Between 1940 and 1950 nearly 8,000 new county records and 125 new state records were added. (Dr. Yuncker is also outstanding among Indiana monographers for his work on the Dodders, genus Cuscuta.)

ZOOLOGY AND ZOOLOGISTS IN INDIANA

Of the scientists sketched in this volume, 142 list themselves as zoologists and 85 as biologists, while many others who study animals list themselves as specialists. For example, 57 are entomologists, seven are animal ecologists, nine are embryologists, three are animal pathologists, and four are ornithologists. In addition, a considerable number of the eight cytologists, 26 geneticists, 15 histologists, and six anatomists study animals. Another sizable group actually study animals: 27 animal husbandry men, 26 dairy experts, 13 poultry experts, and ten veterinarians. Thus, it appears that about 400 scientists here sketched are students of animals.

Indiana has ranked high as to zoologists since the 1870's. Before that date, little zoological work had been done in the state, although some naturalists traveling along the Ohio River or staying briefly at New Harmony or elsewhere had made collections, had described some new species of animals, and had compiled fragmentary lists of the local fauna.

The coming of David Starr Jordan to the state in 1874 soon resulted in greatly increased interest in the fauna. He was such an enthusiast, so adept at recognizing talent, and so successful in encouraging others that even his year as a teacher in the Indianapolis high school had significant results. Two of his high school students became distinguished zoologists. During his years at Butler (1875-79), his stimulating influence was notable. His years at Indiana University (1879-85 as professor, 1885-91 as president) resulted in that University's becoming widely known as a center of zoological research and training. Dr. Jordan's extensive writings and his scattered students helped spread his influence. Indiana was the state of birth of 19 men who have been starred as zoologists in *American Men of Science.* Thirteen of these men were students of Dr. Jordan or of men started by him. In addition to these 19 native Hoosiers, several subsequently-starred zoologists came into Indiana to study under Dr. Jordan or his students.

Zoology has been taught in all Indiana colleges since 1890. Of the 19 subsequently-starred zoologists, two got their college degrees at Butler, three at DePauw, two at Earlham, and 12 at Indiana University. In addition, five of those who received earned higher degrees at Indiana under Dr. Jordan were subsequently starred.

Of the faculty, past or present, who have been starred in zoology, Indiana University has had 13. They are listed in the summary as to zoology at Indiana University. Butler has had three (while Jordan was there), and DePauw, Earlham, and Purdue, one each. Hence, in this respect also Indiana University's position in zoology is outstanding. Of the present Indiana University zoology faculty, four are starred and two are members of the National Academy of Sciences, Muller and Sonneborn. Muller is a Nobel prize winner.

During 1936-45, Indiana University awarded 13 doctorates in zoology, Purdue, four, and no other Indiana institution any. In those years, Indiana University ranked sixteenth among American universities in the number of doctorates conferred in zoology.

Of the 955 persons who received the doctorate in zoology 1936-45 in the United States, 34 had received their college degree in Indiana: DePauw had graduated 12; Purdue, six; Butler, Earlham and Wabash, three each; Indiana University, Indiana Central, and Notre Dame, two each; and Goshen, one.

Of the presidents of the Indiana Academy of Science, 13 are known as zoologists, five as entomologists, and one as a biologist. Of these 19 men, Indiana University employed five, Purdue, two, Butler, two, and Earlham, Indiana Central, Indiana State Teachers, Moores Hill, and Wabash, one each; the state government employed three, and two were privately employed. (The names of these ex-presidents are listed elsewhere.)

The preceding two paragraphs reveal that zoology has been well represented and taught at several Indiana schools. Purdue stands high, especially as to entomology. Butler, DePauw, Notre Dame, and Wabash have had a succession of able teachers. The summaries as to those institutions give some details and names.

Zoology is such a large field that few workers attempt to study all aspects. The study of fishes was an especial interest of Jordan, Gilbert, Eigenmann and Ricker, while insects especially interested Blatchley, Bodine, Davis, Kinsey, Wallace, and Williamson. Bird study had a special appeal to Butler, S. Coulter, M. L. Fisher, McAtee, Scott, and Test.

GEOLOGISTS AND GEOLOGY IN INDIANA

Of the scientists sketched in this volume, 88 are geologists and 13 are paleontologists. Six native Hoosiers have been starred in *American Men of Science*: H. F. Bain, C. P. Berkey, O. P. Hay, E. M. Kindle, P. B. King, and F. B. Taylor. Only one of these six graduated from an Indiana college, Kindle, from Indiana University; but two additional geologists received graduate degrees at Indiana University, J. C. Branner and Hay. Three subsequently-starred geologists have taught in the state, Hay at Butler and Branner and Kindle at Indiana University, but Kindle for only one year.

Geology has been taught at Indiana University since the Civil War and at DePauw, Earlham, Hanover, Indiana State, Notre Dame, and Wabash for long periods. During his years at Indiana University, David Starr Jordan taught a popular course in geology. Similarly, at Wabash College, John Merle Coulter taught geology as well as biology.

Graduate work in geology has been offered only at Indiana University, where during 1936-45 three doctorates were awarded. Of 420 persons who received the doctorate in geology in American universities in that decade, 12 had received their undergraduate degree from an Indiana college or university: five from Indiana University, five from DePauw, and one each from Earlham and Hanover.

Field geologic studies commenced early in Indiana. The summary below on geologists before 1900 by the late C. A. Malott reports on them. From 1918-46 Dr. Malott himself did much field work in the state. Other geologists meriting mention in the period 1900-50 include C. R. Dryer, professor at the State Normal 1893-1913; W. N. Logan, professor at Indiana University and state geologist 1919-35, and editor and co-author of *Handbook of Indiana Geology* (1922); E. R. Cumings, head of the department at Indiana University 1902-42; Charles F. Deiss, state geologist and chairman of the department of geology at Indiana University since 1945; and Ernest R. Smith, head at DePauw 1921-47, an exceptionally stimulating teacher of able students.

Of the presidents of the Indiana Academy of Science, J. C. Branner, G. Culbertson, E. R. Cumings, C. R. Dryer, and C. A. Malott were geologists. O. P. Hay was a paleontologist, although when elected he was chiefly a zoologist. Dryer was a geographer as well as a geologist.

Of the geologists from Indiana, Berkey and Branner became most famous, both president of the Geological Society of America and both a member of the National Academy of Sciences. Berkey is especially noted for his aid to engineering. A Berkey volume of the Geological Society of America issued in 1950 contains an evaluation of his accomplishments. Branner succeeded David Starr Jordan as president of Stanford University.

Indiana Geologists Before 1900

By Clyde A. Malott, Indiana University

The geology of Indiana has been the subject of study by a few geologists whose names are famous in American geology, but the presentation of the field details has been largely the work of local geologists. This is true not only up to 1900, but to the present. J. P. Leslie and F. H. Bradley worked briefly in Indiana in 1859 and 1869, respectively. Leo Lesquereux, S. A. Miller, C. A. White, E. D. Cope, and James Hall contributed notably to the paleontology of Indiana in the 1870's and 1880's. Lesquereux was on the second Owen survey in 1859 and contributed notably to the knowledge of the coal-bearing formations. Frank Leverett, T. C. Hopkins, and G. H. Ashley presented much field detail in Indiana geology in the 1890's.

All of the official state geologists of Indiana have been residents, and their reports constitute voluminous details on Indiana geology. D. D. Owen of New Harmony made a special geological survey of Indiana in 1837-38. A second special survey was made by R. T. Brown, 1851-53, and a third by Richard Owen, 1859-61. E. T. Cox, also of New Harmony, was state geologist for ten years following the establishment of the Indiana Geological Survey in 1869. For the detailed county surveys of the Cox period, Rufus Haymond, John Collett, B. C. Hobbs, Robert Warder, W. W. Borden, M. N. Elrod, and E. S. McIntire did much of the field work. John Collett followed as state geologist and served until 1885. He employed the services of G. K. Greene, R. T. Brown, A. J. Phinney, D. S. M'Caslin, and M. N. Elrod. Maurice Thompson was appointed state geologist in 1885 and served until 1888. His geologist staff was composed of S. S. Gorby, A. J. Phinney, W. H. Thompson, R. T. Brown, and C. R. Dryer. S. S. Gorby was appointed state geologist in 1889 and served until 1894. He was aided by Maurice Thompson, M. N. Elrod, A. C. Benedict, E. P. Cubberly, and C. R. Dryer. The productive surveys and investigations of W. S. Blatchley began in 1895 and continued for 16 years. His earlier staff was composed of C. E. Siebenthal, E. M. Kindle, J. T. Scovel, and J. A. Price, all local geologists, and in addition, he had the services of specialists T. C. Hopkins and G. H. Ashley.

Other geologists contributing to the geology of Indiana before 1900 were C. S. Beechler, V. F. Marsters, John Newsom, Joseph Moore, L. F. Bennett, A. C. Veatch, A. H. Purdue, W. A. McBeth, and Glenn Culbertson. (Of the 44 geologists herein mentioned, 34 were residents or natives of Indiana.)

INDIANA GEOGRAPHERS

By J. E. Switzer, Indiana University

Geography as a subject of college grade is of recent development in the United States, though it has long held an important place in European universities.

Charles R. Dryer, during his twenty years of teaching at the State Normal School at Terre Haute, helped many future Indiana teachers to realize that geography is much more than the memorization of facts and places. He inspired his pupils to investigate their surroundings, and taught them to observe both the development of phenomena and the human relationships to these phenomena. Dr. Dryer also furthered geographic concepts by writing *Studies in Indiana Geography, Lessons in Physical Geography,* and *Geography—Physical-Economic-Regional.* He was a charter member of the Indiana Academy of Science and its president in 1911. Geographers who followed Dr. Dryer at Terre Haute are Bernard H. Schockel (who made a pioneer study of the geography of the manufacturing industries of Evansville), Frederick J. Breeze, Leroy Perkins, and G. David Koch.

At Ball State Teachers College, geography is a division of the department of science. Dr. Floy Hurlbut succeeded F. J. Breeze in 1931 as head instructor, and she and her assistants offer a wide choice of courses.

Alfred H. Meyer of Valparaiso University has built up a large and enthusiastic clientele among his students. His interests are largely in the human and economic phases of geography.

At Indiana University, geography was taught in the department of geology until 1946, when it was awarded departmental status. In 1950, the department of geography had a staff of nine. A dozen masters' degrees had been awarded, and the first doctorates. Stephen S. Visher was Indiana University's first trained geographer. His numerous publications, stressing comparisons and contrasts in the climate and in all phases of production within the state, have increased awareness of geographical contrasts. Others who have taught geography at Indiana University include J. E. Switzer, especially interested in the development of inland transportation; Chauncy D. Harris, interested in urban geography; Otis W. Freeman, author of papers on various aspects of Indiana geography, notably the state parks; Otis P. Starkey, chairman of the department and co-author of a widely-used text book on economic geography; Thomas F. Barton, devoting his efforts especially to the development of better teaching methods and techniques; and George J. Miller, for thirty years editor of the *Journal of Geography.* (Upon Dr. Miller's retirement, Dr. Barton became editor of the *Journal.*) Four former members of the department of geology and geography who contributed to increased understanding of various aspects of Indiana's geography are William M. Tucker, who studied Indiana lakes and water power; Arch R. Addington, who made a model of the Bloomington Quadrangle which gave impetus to local field studies; William D. Thornbury, who studied the glaciation boundary, glacial soils, mineral waters, and health resort distribution; and James R. Anderson, whose five published studies of the geography of Morgan County have made it one of the better-known counties of the state geographically.

Among the alumni of Indiana University who have won recognition as geographers are Clifford M. Zierer, long chairman of the department at the University of California at Los Angeles; John K. Rose, geographer consultant to the U. S. Congress; Richard Houk, professor, De Paul University; James R. Anderson, professor, University of Maryland; Suprakos Ghosh, expert with the Food and Agricultural Organization of the United Nations; Benjamin Moulton, professor and head of the department at Butler University; and Ronald L. Ives, author of numerous scholarly papers.

Some geography is taught at most of the other universities and colleges of Indiana but mostly by men who are not trained geographers. Little systematic geographic research has been carried on in Indiana, and many opportunities await willing, competent investigators.

CONTRIBUTIONS TO CONSERVATION IN INDIANA

By Howard H. Michaud, Purdue University

Conservation of Indiana's natural resources requires an understanding of what resources there are and how they should be managed to yield the greatest benefit to the people. All who have furthered this knowledge should be commended. Space does not permit detailing even a part of the outstanding work that has been done by many.

The work of most early scientists of Indiana was primarily taxonomic. Thus, man's first contact with the flora, fauna, geology, mineralogy, and soils of Indiana was for the purpose of describing and naming them. The spirit of exploring prevailed among the well-known members of the New Harmony community from 1815-1875, including Robert Owen and Dale Owen, geologists; Thomas Say, " the father of American entomology, conchology and zoology "; and Charles A. Le Sueur, ichthyologist.

Although most recent scientists have been concerned with the utilization and management of resources, the task of recording has continued.

Among those who were prominent before 1900 are Amos W. Butler (ornithologist), David Starr Jordan (ichthyologist), Willis S. Blatchley (naturalist, author, and state geologist), E. B. Williamson (entomologist), and Frank B. Taylor (geologist). Both Blatchley and Butler frequently expressed concern over the undue exploitation of Indiana's natural resources, Mr. Butler as early as 1894 in his presidential address to the Indiana Academy of Science.

The agency of state government most active in the study and conservation of natural resources from 1869 to 1919 was the office of the state geologist. While most of its attention was directed toward developing Indiana's rocks, minerals, oil, and gas, there were many studies of native flora and fauna.

During the early years of the present century, numerous prominent individuals clearly understood that Indiana's resources were dwindling rapidly. Stanley Coulter, botanist and dean of the school of science, Purdue University, was well aware by 1900 of diminishing forest resources, and frequently expressed concern. Under his direction Professor B. N. Prentice, graduate of the New York State College of Forestry, came to Purdue University in 1914 to conduct courses in forestry. In 1926, forestry received full department status with Professor Prentice as head. Dean Coulter was an original member of the Conservation Commission established in 1919. Frederick J. Breeze, Ball State Teachers College, advocated setting aside an area of natural beauty as a state park as early as 1906. Impressed by the ruinous effects of deforestation in the hills of southern Indiana, Glenn Culbertson, Hanover College, in a presidential address to the Academy in 1908, advocated reforestation.

In 1913, a conservation symposium was held at the annual meeting of the Indiana Academy of Science. This brought together leaders in conservation and reported the status of natural resources. Jay Cravens told of a sanitary survey of Indiana rivers; Will Scott, Indiana University, discussed the relation of the lakes of northern Indiana to flood control; H. W. Anderson, botanist, Wabash College, spoke on taxation of forest lands; Stanley Coulter spoke on first steps in Indiana forestry; and F. M. Andrews, botanist, Indiana University, discussed forests and floods. Mineral resources were included in the symposium. Edward Barrett, state geologist, discussed possible dangers from drilling for oil and gas, and G. C. Mance, Bloomington, spoke on power economy and utilization of waste in the quarry industry. Public health as related to human conservation was also discussed.

An important step was the establishment of the Indiana Department of Conservation in 1919. Conservation leaders for some time had urged that all of the natural resources come under a co-ordinated plan of administration. Colonel Richard Lieber, Indianapolis, ardent conservationist with particular interest in forests, was appointed director. His capable influence directed the selection of W. A. Guthrie, Dupont, and John W. Holtzman, Indianapolis, two men prominent in business and politics, as members of the first commission. Dean Stanley Coulter of Purdue and Richard M. Holman of Wabash, both prominent botanists, were appointed as the two other members.

Division directors of the first Department of Conservation were W. N. Logan, state geologist, Frank N. Wallace, state entomologist, Charles C. Deam, state forester, and Richard Lieber, director of state parks. Colonel Lieber was influential in developing Indiana's state park system into one of the most outstanding in the nation. He also wrote *America's Natural Wealth,* published by Harper's (1942). Frank N. Wallace long continued as director of the division of entomology, and his influence in promoting conservation of the resources of the state has been notable.

Indiana owes great respect, praise, and tribute to Charles C. Deam, first state forester, for his numerous contributions to conservation. For many years he has studied forestry and the flora of the state. Dr. Deam began managing the Clark County State Forest shortly after its start in 1903, and continued to serve as state forester until 1929. *Flora of Indiana* (1940) is a monumental contribution. Other works include *Trees of Indiana, Shrubs of Indiana,* and *Grasses of Indiana.*

David Starr Jordan, while professor at Indiana University, in 1880 initiated the study of Indiana's fisheries resources. Research and fisheries management have been continued by Indiana University in co-operation with the Indiana Department of Conservation. National recognition in this field has been maintained through the successive leaderships of C. H. Eigenmann, Will Scott, and William Ricker.

Persons who contributed much to the conservation of bird life and to the early work of the Indiana Audubon Society include Stanley Coulter, Amos W. Butler, Willis C. Blatchley, David W. Dennis, M. L. Fisher, L. A. Test, William Watson Woolen, Robert McBride, Rousseau McClellan, S. E. Perkins III, Frederick Breeze, and Frank C. Evans. Two persons still active and meriting commendation for their many years of service are Alden Hadley of the Indiana Department of Conservation, and Earl Brooks, director of the Mary Gray Bird Sanctuary, Connersville.

Some scattered efforts on soil conservation shortly after the Civil War were reported in annual reports of the Indiana Department of Geology and Natural Resources. It was nearly 1920 before any notable contribution was made to soil conservation. T. M. Bushnell of Purdue began his soil surveys in that year, studies which he continues and which have contributed generously to the knowledge of Indiana soil types throughout the years.

One of the state's most ardent exponents of soil conservation was Ralph M. Kriebel (1897-1946). In 1935 he became biologist and farm planner for the Soil Conservation Service, and from 1943 to 1946 served as extension soil conservationist, Purdue University. There he became nationally known.

Frank B. Wynn, a physician of broad influence not only in Indiana but in the nation, was an effective champion of conservation, state parks and outdoor life.

A list of leaders still active in the conservation of our Indiana resources follows:

Forestry

E. R. Martell, T. E. Shaw, Daniel Den Uyl, B. N. Prentice, Department of Forestry, Purdue University
Charles C. Deam, botanist, Bluffton
Ralph Wilcox, State Forester, Indiana Department of Conservation
John E. Potzger and Ray C. Friesner, Department of Botany, Butler University

Soils

George Scarseth, Director of Research, Indiana Farm Bureau, Lafayette
Kenneth M. Welton, State Soil Conservationist, U. S. Soil Conservation Service, Lafayette
T. M. Bushnell and J. B. Peterson, Department of Agronomy, Purdue University

Geography and Geology

S. S. Visher, Department of Geography, Indiana University
C. F. Deiss, State Geologist, and R. E. Esarey, Department of Geology, both at Indiana University
Alfred H. Meyer, Valparaiso University

Fisheries

Dave G. Frey, Shelby Gerking, and W. E. Ricker, Department of Zoology, Indiana University

Entomology

Frank N. Wallace, Director, Division of Entomology, Indiana Department of Conservation
J. J. Davis, Head, Department of Entomology, Purdue University

Wildlife

William B. Barnes, Coordinator, Pittman-Robertson Wildlife Projects, Indiana Department of Conservation
C. M. Kirkpatrick, Department of Forestry, Purdue University

Water

Charles M. Beckert, Director, Division of Water Resources, Indiana Department of Conservation

Conservation Education

Howard H. Michaud, Department of Forestry, Purdue University

CHEMISTRY AND CHEMISTS IN INDIANA

Chemists comprise slightly more than a fourth of the scientists sketched in this volume. They are more numerous than any other group.

Chemistry is now taught at each of the colleges, and most of them have had relatively strong departments for many decades. Sketches as to the local situations are given elsewhere for several of the institutions. Purdue University has already conferred more than 3,000 masters' degrees in chemistry and 704 doctorates. During the decade 1936-45 Purdue awarded 173 doctorates in chemistry and biochemistry, Indiana University 70, and Notre Dame 61. The number of persons who obtained doctorates in chemistry, biochemistry, pharmacology and allied subjects during 1936-45 who had received their collegiate training in Indiana is as follows: Indiana University, 62; Purdue, 55; DePauw, 46; Notre Dame, 44; Wabash, 18; Manchester, 14, Butler, seven; Evansville, seven; Hanover, five; Rose Polytechnic, five; Franklin, three; Indiana State College, three; Tri-State, two; and Ball, Goshen, Oakland City, and Valparaiso, each one.

Eleven chemists starred in *American Men of Science* were born in Indiana: R. F. Bacon, G. L. Clark, A. C. Cope, M. R. Fenske, C. A. Kraus, S. A. Lattimore, H. M. McCoy, W. A. Noyes, Lee J. Smith, W. M. Stanley, and H. W. Wiley. Of these Cope, Kraus, Noyes, Smith, and Stanley have been elected to the National Academy of Sciences, and Stanley has won a Nobel prize. Another Nobel prize winner born in Indiana, H. C. Urey, is a physical chemist.

Thirteen chemists who have been starred obtained their college training in Indiana: *Butler,* Cope; *DePauw,* Bacon, Clark, Fenske, Lattimore; *Earlham,* H. E. Howe, Stanley, R. B. Warder; *Hanover,* Wiley; *Manchester,* P. J. Flory; *Notre*

Dame, J. A. Nieuwland; *Purdue,* McCoy; and *Valparaiso,* J. E. Teeple.

The record as to DePauw merits special mention. W. M. Blanchard's success in encouraging able students to become scholars is in conspicuous contrast to the failure to have a single chemistry alumnus of Indiana University to win a star, and none from Purdue since 1892. Purdue has had since 1892 many thousands of graduates in chemistry.

Of the present or former faculty members, the following have been starred in chemistry: *DePauw,* Lattimore; *Earlham,* H. N. Holmes; *Indiana University,* F. T. Gucker, R. E. Shriner; *Notre Dame,* J. A. Nieuwland; *Purdue,* H. B. Hass, Walter Jones, H. W. Wiley; *Rose,* W. A. Noyes (the father); and *Wabash,* Alexander Smith.

The following chemists have been president of the Indiana Academy of Science: Wm. Blanchard, E. F. Degering, P. N. Evans, E. G. Mahin, M. G. Mellon, G. A. Nieuwland, W. A. Noyes, F. B. Wade, and H. W. Wiley.

ENGINEERS IN AND OF INDIANA

About 500 engineers are sketched in this volume because they are recognized as scientists as well as engineers. A considerable proportion of them have been connected with engineering schools or with experiment stations, largely in other states. However, Purdue University, for decades one of the largest American engineering schools, has employed many scientists engineers and has trained a sizable number. Notre Dame University, Rose Polytechnic Institute, and Valparaiso University have also had schools of engineering that have employed or trained a number here sketched. Purdue University conferred 16 doctorates in engineering 1936-45. Of the 545 persons who received doctorates in engineering from American universities in that decade, 13 had received their college degree in Indiana, eleven from Purdue and one each from Rose Polytechnic and Goshen.

Indiana engineers have included some of the most eminent, for example, James B. Eads and Ellwood Mead, both world renowned. (For something as to their work, see their sketches.) A. A. Potter, dean at Purdue, has received high recognition for distinguished work in "human engineering" —learning what each young engineer is best qualified to do and helping him get work for which the requirements essential to success are those that he possesses.

INDIANA SOIL SCIENCE AND SCIENTISTS

With the aid of T. M. Bushnell, Purdue University

Soil chemistry and the use of fertilizers were studied extensively commencing in 1880 by members of the staff of the U. S. Experiment Station at Purdue by Professors C. L. Ingersoll, W. C. Latta and S. D. Conner.

Soil experts who carried on soil investigations in Indiana for a number of years and who then continued field studies elsewhere include: J. B. Abbott, H. R. Adams, J. E. Adams, S. C. Jones, A. B. Krantz, N. J. Plice, J. H. Robinson, C. S. Simmons, H. R. Smalley, S. F. Thornton and P. T. Veale.

Those of the present Purdue staff who have been active in Indiana soil studies for a decade or longer include: T. E. Barnes, T. M. Bushnell, H. Kohnke, R. R. Mulvey, A. J. Ohlrogge, H. P. Ulrich, G. P. Walker and R. A. Weaver.

In recent years, the soil studies have been increasingly devoted to fundamental problems such as soil temperatures, drainage, structure, tilth, mulch tillage, muck subsidence, the determination of "available elements", exchangeable ions, evidences of plant food deficiencies, etc. U. S. Jones made in 1940 some pioneer studies with radio-active tracers.

Since 1934 the U. S. Soil Conservation Service has made in Indiana highly significant contributions to increasing the knowledge of soils and their wiser utilization.

Various engineering aspects of soils have been studied by the Joint Highway Research Project under the leadership of K. B. Woods.

The field mapping of soils under the direction of A. D. Hole, Professor of Geology at Earlham, was especially notable in starting several men who later became distinguished soil scientists. Included are Mark Baldwin, Earl D. Fowler, O. C. Rogers and James Thorp. Thorp is widely recognized for his studies of the soils of China.

AGRICULTURISTS IN AND OF INDIANA

Of the scientists sketched in this volume, nearly 250 may be classed as agriculturists. These men are nearly all professional workers connected with universities or experiment stations. They include about 50 agronomists, about 40 horticulturists, about 25 each of animal husbandrymen, dairy experts, and soil scientists, and from ten to 20 experts each in forestry, poultry, and veterinary science. Also, five are listed as pomologists and 33 as agricultural economists.

Purdue University has trained a large share of these scientists who received their training in Indiana, and Purdue and the associated U. S. Experiment Station have employed most of those who found employment in Indiana. However, both Notre Dame and Valparaiso universities had for some years schools of agriculture, and they helped train and employ a few of these men. A number of agriculturists were partly trained, chiefly as undergraduates in botany, at other colleges in the state.

Although many of the workers in agriculture here sketched are natives of Indiana and received much of their training here, more came into Indiana from other states for employment than went out from the state after graduation.

Purdue University awarded seven Ph.D.'s in agriculture during 1936-45, and one in horticulture. Among the nation's leading universities in this respect, Purdue ranked eleventh.

Of the 638 persons who received doctorates in the United States 1936-45 in agriculture or horticulture, 20 received their college degree in Indiana. Purdue graduated 17 and DePauw, Wabash, and Indiana State Teachers College one each.

Purdue University has consistently ranked as one of the nation's strongest agricultural colleges, and with Purdue has been closely associated one of the most productive of the U. S. experiment stations. Research has been conducted on numerous subjects, but perhaps meriting special mention here is that on poultry, including new methods for culling nonlayers; on the development of hybrid corn; and on plant diseases. Much attention has also been devoted to nutritional studies of plants, animals, and man.

PSYCHOLOGY AND PSYCHOLOGISTS IN INDIANA

The second psychological laboratory in the United States was established at Indiana University, and the first detailed study of learning ever made by psychologists was made here

1894-97, the famous Bryan study of the telegraphic language. Partly because of the interest in psychology at Indiana University following 1890, seven native Hoosiers have been starred in psychology in *American Men of Science* as distinguished research workers. Eight such people received their college degrees in the state. This output of psychologists is exceeded in proportion to population by very few states.

Of the eight starred in psychology who graduated in Indiana, Indiana University yielded W. L. Bryan, '84, E. H. Lindley, '93, E. D. Starbuck, '90, C. P. Stone, '15, and L. M. Terman, '02. Earlham College graduated W. R. Miles, '08; Evansville College, J. F. Dashiell, '08; and Valparaiso University, C. P. Stone, '10. The one starred psychologist born in Indiana but graduated elsewhere is G. W. Allport.

Two starred or subsequently-starred psychologists came into Indiana to work, Lillian Martin to Shortridge High School and B. F. Skinner to Indiana University. Dr. Skinner was elected to the National Academy of Sciences after leaving Indiana University. Lewis M. Terman, a teacher in Indiana for several years, is also a member of the National Academy of Sciences following his development of improved aptitude tests and prolonged studies of exceptionally brilliant people.

The Indiana University psychology faculty has included a sucession of men, notably, W. L. Bryan, E. H. Lindley, J. A. Bergstrom, W. F. Book, J. R. Kantor, G. S. Snoddy, E. S. Conklin, B. F. Skinner, R. C. Davis, and D. G. Ellson.

A total of 210 psychologists are sketched in the present volume. Of these, more than half are natives of Indiana, many of whom left the state for their college and graduate training.

Psychology has long been taught at all colleges and universities in Indiana. Graduate degrees are given in psychology at the larger universities, and numerous doctorates have recently been conferred at Indiana University and Purdue—during the decade 1936-45, ten at Indiana University and 22 at Purdue (one at Notre Dame).

Purdue has specialized in industrial and applied psychology, and the department at Indiana University has specialized in experimental and theoretical psychology. Both departments have maintained training and research programs in clinical psychology.

Of the 958 persons who received doctorates in psychology somewhere in the years 1936-45, 25 had received their college degree from an Indiana school: seven each from DePauw and Indiana University, six from Purdue, and one each from Butler, Canterbury, Notre Dame, St. Joseph's, and Valparaiso.

PHYSICS AND PHYSICISTS IN INDIANA

About 460 of the scientists sketched in this volume class themselves as physicists, and a considerable number of the engineers apply physics. The yield of physicists per 100,000 population is, however, somewhat less in Indiana than in the average state. This is in contrast to a higher than average yield of biologists and psychologists.

Physics has been taught in Indiana colleges for many decades. (Some details as to Butler, DePauw, Indiana, Notre Dame, Purdue, and Rose Polytechnic are given in the summaries for those institutions.) Indiana University and Purdue have had especially strong departments in recent decades, but even before 1890, Rose Polytechnic had on its staff several outstanding physicists.

Seven natives of Indiana have been starred in *American Men of Science* for research in physics: L. A. DuBridge, A. L. Foley, W. H. Furry, E. Merritt, W. B. Nottingham, J. O. Reed, and H. C. Urey. Urey also won a Nobel Prize and he and DuBridge are members of the National Academy of Sciences. Only three of these seven starred physicists graduated from Indiana colleges, but eight subsequently-starred men came into Indiana for their college training; namely, F. C. Brown, E. S. Johonnott, C. T. Knipp, A. C. Longden, M. Luckiesh, C. E. Mendenhall, G. W. Stewart, and O. M. Stewart. *DePauw* graduated four (Furry, Longden, and the Stewart brothers); *Indiana University* graduated three (Brown, Foley, Knipp); *Purdue* graduated Luckiesh and Nottingham; and *Rose* graduated Johonnott and Mendenhall. Past or present members of the faculty of Indiana schools who have been starred are: *Purdue,* A. P. Carman, A. W. Duff, E. S. Ferry, K. Lark-Horovitz, L. M. Norheim, F. A. Waterman; *Indiana,* F. C. Brown, A. L. Foley, C. T. Knipp, A. C. G. Mitchell, B. F. Snow; *Rose,* Johonnott, Mendenhall; and *Wabash,* N. A. Kent.

Seven past presidents of the Indiana Academy of Science were physicists, T. C. Mendenhall, Thomas Gray, A. L. Foley, C. L. Mees, L. P. Naylor, R. R. Ramsey, and J. F. Mackell.

During 1936-45, Purdue conferred the Ph.D. in physics on 29, Indiana on 21, and Notre Dame on eight. Of the 1,264 persons who received doctorates in physics from American universities in that decade, 38 had received their college degrees in Indiana, as follows: Indiana University, 14; DePauw, five; Purdue, five; Notre Dame, four; Manchester, three; Butler, two; and Ball, Earlham, Franklin, Tri-State, and Valparaiso, one each.

SCIENCE AND SCIENTISTS AT PURDUE UNIVERSITY

Nearly a quarter of the scientists sketched in this volume are graduates or present or former faculty members of Purdue University. Purdue conferred the bachelor's degree on 483, the doctorate on 361. Purdue University or the U. S. Experiment Station affiliated with it, have employed 625 of these scientists. Purdue University's contribution to science has been exceptionally broad, including several large groups not represented in most other Indiana schools. Examples are many score of agricultural and engineering scientists and large numbers of entomologists and plant and animal pathologists.

Purdue University from its beginning was a school of science, engineering, and agriculture, while most other Indiana schools started as liberal arts colleges, especially interested in the training of clergymen (in the earlier decades) or teachers or lawyers. Nearly all of the presidents of Purdue University have been scientists, in contrast to the situation in most other Indiana schools.

Purdue University has had large enrolments of men students, greater than has any other Indiana school almost from its founding, far greater than any other during recent decades except very recently, when Indiana University has approached or occasionally passed Purdue's total.

The departments of biology, chemistry, and physics have been conspicuously large at Purdue, partly because they supply basic training needed by future agriculturalists and engineers. They have, however, also trained many specialists. For example, Purdue Univeristy has awarded more than 3,000 masters' degrees in chemistry and more than 700 doctorates.

Of the doctorates awarded in science 1936-45 in all American universities, Purdue University conferred 285, ranking as sixteenth institution in this respect. In that decade, Purdue conferred seven doctorates in agriculture, one in bacteriology, 18 in biochemistry, five in botany, 155 in chemistry, 16 in engineering, one in entomology, one in horticulture, three in mathematics, 18 in pharmacology, 29 in physics, five in physiology, 22 in psychology, and four in zoology.

In addition to the large amount of graduate training implied by the data above, Purdue gave undergraduate training to many future scientists. For example, of those who obtained doctorates in science 1936-45 in any American university, Purdue had supplied undergraduate training (a college degree) to 117, classified by doctoral field as follows: agriculture, 11; astronomy, one; bacteriology, four; biochemistry, six; botany, seven; chemistry, 37; engineering, 11; entomology, two; genetics, one; horticulture, six; mathematics, one; metallurgy, four; pharmacology, eight; physics, five; physiology, one; psychology, six; and zoology, six.

Of the alumni of Purdue University, five have been starred in *American Men of Science* as especially distinguished in research. They are H. L. Bolley '88 (botany), H. M. McCoy '92 (chemistry), J. B. Shaw '89 (mathematics), and M. Luckiesh '09 and W. B. Nottingham '20 (physics).

Of the present or former members of the faculty, the following have been starred in *American Men of Science*: J. C. Arthur, E. M. Blake, H. L. Bolley, A. P. Carman, S. Coulter, A. W. Duff, E. S. Ferry, M. E. Gardner, H. B. Hass, H. S. Jackson, Walter Jones, J. S. Karling, F. D. Kern, K. Lark-Horovitz, D. T. MacDougal, E. B. Mains, L. W. Nordheim, C. R. Orton, L. C. Petry, R. B. Warder, F. A. Waterman, F. M. Webster, and H. W. Wiley. Most of these men served Purdue only briefly; but Arthur, Coulter, and Hass served for decades and Gardner, Jackson, Mains and Wiley for a dozen years or so.

In addition to the starred scientists, Purdue has had many distinguished professors, including 12 who have been president of the Indiana Academy of Science (J. C. Arthur, C. A. Behrens, S. Coulter, C. C. Davis, E. F. Degering, H. E. Enders, P. N. Evans, E. G. Mahin, M. G. Mellon, C. L. Porter, C. D. Waldo, and H. W. Wiley.)

Numerous other former or present faculty members and alumni merit listing. (Some are listed in the summaries as to chemistry and biology.)

SCIENCE AND SCIENTISTS AT INDIANA UNIVERSITY

Of the scientists sketched in this volume, Indiana University conferred the bachelor of arts or science degree on 532, the doctor's degree on 328. No other school has more collegiate alumni represented, and only Purdue has more doctors.

In the number of male college students enrolled, Indiana University has been the second or third institution in the state. It has ranked high in the number of future scientists graduated, partly because relatively many have gone on in science after graduation.

Until 1879, when David Starr Jordan became professor, science was relatively unimportant at Indiana University. Many of the students became lawyers, non-specialized teachers, or physicians. Dr. Jordan, enthusiastic about scientific research, greatly stimulated interest in science. Especially during his years as president, 1885-91, he was able to mold Indiana University into a school of science rather than of law or language. His dynamic personality, his keen appreciation of the abilities of capable young men even though they were crude, and his effective example, all attracted an outstanding group of students. During his 12 years at Indiana University, more than three score later-distinguished scientists worked here. After he left in 1891 to become president of the new-established Stanford University, taking with him a considerable number of the faculty, a few years elapsed before Indiana University was again strong in science. However, in the years 1898-1907 it was again one of the nation's leaders in the field.

In the first seven editions of *American Men of Science,* 1906-1944, scientists were starred if especially distinguished for research, the decision being made by secret vote of their fellow scientists. Of the 81 scientists so starred who obtained college degrees in Indiana, Indiana University graduated 32, DePauw (long a larger school than Indiana University) graduated 12, Earlham eight, Wabash six, Purdue five, Hanover and Valparaiso each four, Butler and Rose three each, and

Evansville, Franklin, Manchester, and Notre Dame one each.

Of the 32 collegiate alumni of Indiana University who later were starred, 12 were starred in zoology, all students either of David Starr Jordan or of a student of his. Five of the 32 were starred in psychology, all but one also students of Dr. Jordan. Five were starred in astronomy, four of whom were students of John A. Miller, who was a student of Dr. Jordan. Three were starred in physics, two in botany, two in physiology, and one each in anthropology, geology, and pathology. (The names of these men are given in the section on starred scientists.)

In addition to the starred collegiate alumni are several starred higher-degree alumni, some of whom did their work under Dr. Jordan. There are also large numbers who have become prominent though not starred, including several in high administrative posts.

The first period of Indiana University's prominence in science arose, as already remarked, out of David Starr Jordan's influence. The second period is partly attributable to Charles H. Eigenmann, Jordan's successor as head of the department of zoology and the first dean of the graduate school. Dr. Eigenmann became such a distinguished scientist that he was elected to the National Academy of Science, the first professor in the state to be so honored. Dr. W. L. Bryan, made president of the University in 1902, was also highly significant in the second period. He had ambitious plans, a young faculty filled with hope, and a reasonably large group of talented students interested in science.

Five men who received the bachelor's degree the year of Dr. Bryan's election as president were later starred, partly as a result of their being aided to continue graduate work at Indiana University. Two graduates of the next year, 1903, are in the same category, as were two each of the next three years. Since 1906, however, only two men subsequently starred have graduated from Indiana University, a sharp contrast with the Jordan period or the early years of Dr. Bryan's administration. (Since 1906, 16 later-starred scientists have graduated from other Indiana colleges or universities.)

The decline in scientific output during 1907-37 was associated with the ebbing of the bright hopes aroused when Dr. Bryan became president and with the progressive aging of heads of departments and deans. Significant also was the increasing percentage of graduates who entered business, law, medicine, or industry. Moreover, some of the truly stimulating professors of the early years accepted more attractive positions in other institutions, several of which offered better opportunities in science than did Indiana University.

When in 1937 President Bryan, then 77 years old, was succeeded by Herman B Wells, there came a new emphasis upon scholarly work. Since then the University has been notably strengthened, partly with younger productive scholars and partly with men of established reputations but still active, as well as with additional funds and equipment.

Of the scientists sketched in this book, Indiana University has employed for at least two years a total of 349, three times as many as the third institution but notably fewer than Purdue, first on the list because of the many employed there by the U. S. Experiment Station.

Indiana University has had on its faculty considerably more than half of the starred scientists working in the state. A total of about 40 starred or subsequently-starred scientists have been employed by Indiana University. These include the only members of the National Academy of Sciences employed in Indiana. Purdue has employed a total of 16 starred scientists, most of them only briefly. Rose Polytechnic has employed, mostly for long periods, four, Wabash four, DePauw four, and Earlham two.

Although in undergraduate work it is likely that Indiana University may have been second to DePauw in several of the individual sciences in 1950, it appears highly probable that in both undergraduate and graduate training, Indiana University again leads the state in science, as it did in the 1880's and early 1900's.

SCIENCE AT THE UNIVERSITY OF NOTRE DAME

By Kenneth N. Campbell

The University of Notre Dame has had many distinguished scientists on its faculty and has trained many others. Of the scientists sketched in *Indiana Scientists,* 107 are collegiate alumni of Notre Dame and 95 are doctoral alumni.

Mathematics, botany and zoology were taught at Notre Dame as early as 1842, and the science department was organized in 1864. In 1867 a botanical garden and a science museum were started; the first building devoted to science was erected in 1883. Originally only a general B.S. degree was awarded, but in 1907 this was replaced by B.S. degrees in the individual sciences, and in 1920 separate departments for the several sciences were organized The college of science now includes departments of biology, chemistry, physics, mathematics, and geology. The first Ph.D. in science was awarded in 1915, and at present most of the science departments offer programs leading to the doctoral degree.

Biology

Notre Dame has had a succession of brilliant teachers in biology. Father Alexander Kirsch initiated a course in bacteriology in 1879 and wrote the first American textbook on comparative osteology of the vertebrates. Father J. A. Nieuwland, a student of Kirsch, was professor of botany 1904-21. He became especially distinguished for chemical researches, but his contributions to biology were substantial. These included the founding of *American Midland Naturalist* (1909), which is still published by the University. Doctorates in biology have been awarded since 1915.

The bacteriology laboratories became highly significant soon after Father George Albertson came in 1923. Following his death in 1931, James A. Reyniers directed bacteriological research. With the aid of associates, notably Philip Trexler and Robert Ervin, Professor Reyniers expanded the research program so widely that in 1950 it occupied three buildings. Much of the research has been financed with Federal funds because of its significance to public health problems.

Chemistry

Instruction in chemistry commenced by 1852 and laboratory work by 1858, but chemistry was not strong until 1875, when Father John A. Zahm, sometimes called "the real founder of science at Notre Dame," came. He was a teacher of great merit, a good organizer, sincerely interested in science. He planned Science Hall.

Chemistry was the first department to offer a regular program for the doctorate. This was during the term of H. B. Froning as head (1921-42). Father Nieuwland transferred to the department of chemistry about 1918 and resumed his experiments in chemistry. He had done his doctoral work on acetylene at the Catholic University. Father Nieuwland's chemical researches continued until his death and greatly stimulated interest in chemistry at Notre Dame. They were highly significant in leading to the first successful synthetic rubber (Neoprene) and won him a star in *American Men of Science,* as well as several other high honors, including the Nichols Medal. He was also widely known as an inspiring teacher, and many talented young men were attracted to do graduate work with him. At the time of his death, in 1936, there were 15 graduate students in the department. Father Nieuwland was president of the Indiana Academy of Science in 1934. In recent years, under the leadership of Charles C. Price, graduate study and research have continued to expand, until in 1950 there were about 80 graduate students. Chemistry was the first of the sciences to have its own building, Chemistry Hall, built in 1918.

Four departments allied to chemistry may be mentioned. Chemical engineering, started in 1912, became strong by 1942, since which date it has offered advanced degrees. Metallurgy commenced in 1925 and became a separate department in 1932, under Professor Edward Mahin (president of the Indiana Academy of Science in 1928). Work in pharmacy began in 1898 and continued until 1939. The department of agriculture, commenced in 1917 and discontinued in 1932, was also an affiliate of chemistry.

Physics

Physics was taught by 1852 at Notre Dame, partly by men who also taught chemistry. Father Zahm was one of these and was author of an important textbook on the physics of sound. His brother, Albert Zahm, was one of Notre Dame's most distinguished alumni. He built the world's first wind tunnel for the study of aeronautical models and subsequently became the chief research engineer for the Curtiss Airplane Company and later chief of the U. S. Navy aerodynamic laboratory. Robert L. Greene, on the faculty 1895-1914, carried out successful experiments with wireless telegraphy during this time.

Physics became a separate department in 1936, and a Ph.D. program was started. By 1950 there were well-developed research programs in electronics, nuclear physics, and the physics of polymers, with about 50 graduate students.

Mathematics

Although mathematics was taught early, a collegiate major in mathematics was first offered in 1920. In 1936 Dr. Karl Menger (starred in *American Men of Science*) became head of the department, and in 1937 Dr. Emil Artin joined the department. These men gave a strong impetus to the research in mathematics. Dr. Menger and Dr. Artin later left the department and Dr. Arnold Ross became head in 1946. Research has been expanded considerably since the war.

Geology

A course in geology was first offered in 1863. In 1908 the department of mining engineering was established with Knowles B. Smith as head. When that department was discontinued in 1943, work in geology was transferred to the department of chemistry, but in 1948 a department of geology was established, with A. J. MacAlpin as head. He has assembled an excellent staff and initiated a research program.

DEPAUW UNIVERSITY SCIENTISTS

With the aid of Will E. Edington, DePauw University

Of the scientists sketched in this volume, 212 were graduated from DePauw University. Only Indiana University and Purdue have graduated more. In proportion to the number of students enrolled, DePauw has stood second in the college training of Indiana scientists during the past hundred years and in recent years has stood first. During the decade 1936-45, 103 of DePauw's graduates received the Ph.D. in the sciences. In this respect, DePauw led Indiana schools in biology and mathematics, tied for first in geology and psychology, and stood second in physics and third in chemistry.

DePauw graduates have won distinction in numerous lines. Twelve have been starred in *American Men of Science*: D. T. MacDougal in *botany*; R. F. Bacon, G. L. Clark, M. R, Fenske, and S. A. Lattimore in *chemistry*; W. H. Furry, A. C. Longden, G. W. Stewart, and O. M. Stewart in *physics*; and B. M. Allen, F. M. McFarland, and W. A. Riley in *zoology*.

In addition to these twelve who have been starred, a considerable number have become distinguished scientists, including H. L. Barnett, H. T. Cook, Ray Dawson, R. Diettert, John Frazier, W. D. Gray, Charlotte L. Grant, V. Greulach, Jack Oswalt, O. K. Stark, and H. H. York in *botany;* R. A. Baker, O. K. Behrens, H. E. Carter, W. F. Hester, Percy Julian, E. C. Lathrop, J. L. Riebsomer, R. J. Robinson, L. H. Schmidt, and L. E. Stout in *chemistry*; C. S. Cook, R. Humphreys, W. Lozier, T. Stephenson, C. V. Strain, C. M. Turner, and C. A. Whitmer in *physics*; R. S. Daniel, T. N. Ewing, G. Finch, F. C. Frick, A. T. Gordon, Dale B. Harris, H. T. Manuel, D. G. Ryans, Bert Sappenfeld, and K. P. Wagoner in *psychology*; and E. Butcher, William Collings, William Hahnert, H. H. Lane, Richard Overman, A. J. Ramsay, H. W. Schoenborn, and Gilbert Woodside in *zoology.*

Of the DePauw faculty, a considerable number have been widely respected for their own scientific achievements, or as exceptionally successful teachers of future scientists. The following have been president of the Indiana Academy of Science: J. P. D. John, J. P. Naylor, W. M. Blanchard, W. E. Edington, T. G. Yuncker, and Winona Welch. Other faculty members clearly meriting mention here are H. J. Banker, John S. Bobbs, F. D. Brooks, Mel T. Cook, J. M. Fulmer, C. P. Hickman, O. P. Jenkins, W. E. Martin, W. C. Middleton, O. H. Smith, L. M. Underwood, and C. A. Waldo.

Another way in which DePauw has notably aided scientists is through its highly commendable program of scholarships (Rector and the president's) for outstanding students which have been available in recent decades. These scholarships and the excellent reputation of the instruction have attracted many exceptional students from other states as well as from Indiana.

BUTLER UNIVERSITY'S CONTRIBUTION TO SCIENCE

With the Aid of May Schaefer Iske, Butler University

Of the Indiana scientists sketched in this volume, Butler University graduated 75 and employed 45 for at least two years. Of the graduates, three were starred in *American Men* *of Science*: A. C. Cope, '29, in chemistry; and V. C. Twitty, '25, and C. H. Gilbert, '79, in zoology. Other distinguished alumni include botanists W. D. Billings, 33, S. A. Cain, '24, R. F. Daubenmire, '30, J. W. Fischer, '28, Noe Higinbotham, '35, J. A. Moore, '28, J. E. Potzger, '27, T. M. Sperry, '29, O. B. Stanley, '31, R. N. Webster, '33, and R. A. Whitmore, '40. In the medical sciences are J. O. Hutchens, '36, Dean Edward McGavran, '24, Jean Piatt, '32, R. F. Pitts, '29, Waide Price, '28, and D. M. Rioch, '20. Also notable are physicist Eugene Greuling, '37, zoologist F. M. Baumgartner, '31, and mathematician C. H. Forsyth, '06. Something about each of these men is given in the biographical sketches section.

Of the former faculty members, several were starred after leaving Butler. Harvey W. Wiley was professor at Butler for some years before going to Purdue. David Starr Jordan was on the faculty for five years, during which period he commenced the study of fishes for which he soon became world renowned. (He was led to study fishes partly by the enthusiasm of his student and collaborator C. H. Gilbert.) Oliver P. Hay was professor of natural science and chemistry 1879-92. It was during these years that he became interested in paleontology, in which field he later became distinguished. He was president of the Academy in 1891. A fourth subsequently-starred scientist on the Butler faculty was Richard B. Moore, professor of chemistry 1905-11.

Other distinguished scientists formerly on the faculty include Henry Lane Bruner, professor of zoology for 46 years from 1892, president of the Indiana Academy of Science in 1919; and Charles M. Palmer and Stanley A. Cain, '24, botanists.

Notable scientists on the present faculty include Ray C. Friesner, president of the Indiana Academy in 1936, and John E. Potzger, '27, both botanists; Nathan E. Pearson, zoologist; and Charles C. Josey, psychologist.

WABASH COLLEGE AND SCIENCE

By Willis H. Johnson, with Assistance from A. R. Bechtel,
E. L. Haenisch, and Duane Roller
Wabash College

Wabash College has from its opening in 1834 had on its faculty a succession of productive scientists. Of the persons sketched in this volume, 54 were employed here at least briefly and 127 received college degrees here. The faculty has included about a dozen scientists who later were starred and one (Thomas) who was starred while on the faculty. One of the faculty was elected to the National Academy of Sciences after leaving Indiana. Of Wabash alumni, at least a score have become distinguished scientists. Six graduates and a number of students who left before graduation have won stars in *American Men of Science.* As noted elsewhere in this volume, Wabash was for decades one of the leading Indiana colleges in graduating future scientists.

Edmund O. Hovey, one of the founders of the College, taught geology, chemistry, and biology 1836-77. John Merle Coulter, professor of biology and geology 1879-91, was an outstanding leader in science, one of the founders and the second president of the Indiana Academy of Science. Several of his students became distinguished botanists. When Dr. Coulter succeeded David Starr Jordan as president of Indiana University in 1891, his successor at Wabash as head of biology was Mason B. Thomas. During Thomas' twenty years, a succession of students were stimulated and given preliminary training to become distinguished botanists. Donaldson Bodine was professor of zoology and geology for about twenty years (1895-1916). Professor Willis Johnson was in charge of zoology 1929-35 and has been since 1946. From 1935 to 1946 John Paul Scott was in charge. He, too, is widely respected for his research.

For the work in chemistry, the "great teacher," Alexander Smith, was brought from Scotland in 1890 and remained until 1894, when he went to the University of Chicago. One of his students, James B. Garner, was in charge 1901-14. L. B. Howell has been leading professor of chemistry since 1924. In physics, John L. Campbell was professor 1855-1902. "His great ability, personal charm and the prestige of his national reputation made him a power in the affairs of the College during most of his 56 years of service." The present chief professor Duane Roller founded and edited for fifteen years the *American Journal of Physics.*

Four of these Wabash College faculty members have been president of the Indiana Academy of Science: J. L. Campbell, M. B. Thomas, D. Bodine, and, as mentioned above, John M. Coulter.

Among the alumni distinguished as scientists are G. T. Moore, G. N. Rose, E. W. Olive, Donald Reddick, H. H. Whetzel, J. R. Schram—all starred botanists—and H. W. Anderson, L. M. Massey, A. J. Moyer, and S. J. Record (botanists); C. E. Boord, E. C. Britton, J. O. Hendricks, F. H. Rhoades, and R. S. Schreiber (chemists); James Broxon, J. S. Houghan, C. E. Nurnberger, and M. B. Reynolds (physicists); and G. B. Castle, G. P. DuShane, W. D. Funkhauser, and J. D. Van Nuys (zoologists).

SCIENTISTS AT AND FROM TERRE HAUTE

By James F. Mackell, Indiana State Teachers College

The smaller colleges of Indiana have made and are still making valuable contributions to science. In this respect the two at Terre Haute, Indiana State Teachers College and Rose Polytechnic Institute, claim a fair share of honors. Of the scientists sketched in this volume, 46 were graduates of Indiana State Teachers College or of its predecessor, the State Normal, and 27 were employed there at least two years.

One of the founders of the Indiana Academy of Science, Oliver P. Jenkins, was head of the department of biology 1883-86. Several of his students were inspired to become scientists. He contributed numerous papers to the Academy, and later, at Leland Stanford University, became a world-famous physiologist.

Barton Warren Evermann followed Dr. Jenkins as professor of biology. (Both were former students of David Starr Jordan.) Dr. Evermann became a famous ichthyologist and made many contributions to the Academy and to the scientific world.

Dr. Charles Redway Dryer was another scientist who left a lasting imprint upon science at Indiana State. He is still remembered by many who studied geography 1895-1920.

Josiah T. Scovell served on the faculty at Indiana State from 1872 to 1881, preceding Dr. Jenkins. Dr. Louis J. Rettger, a student of Dr. Jenkins, succeeded Dr. Evermann. Dr. Rettger is still widely remembered by public school science teachers of Indiana. These several early teachers encouraged their most promising students toward further study.

Professor Ulysses Cox, a co-worker with Dr. Rettger, was an ardent worker, an inspiration to all his botany and zoology students. Dr. Fred Donaghy, who succeeded Professor Cox, carried on his work with an earnestness rarely matched by a college teacher. Several young men were inspired by Dr. Donaghy to enter scientific careers.

Roscoe Hyde taught at Indiana State in his early years but later became famous at John Hopkins University as professor of immunology. There he taught many Indiana State students who had gone to Johns Hopkins for graduate study. Several of them have become distinguished scientists. Two are Dr. Horace Powell of Eli Lilly and Company, author of numerous papers, and Dr. Herald Cox, who is with the Lederle Laboratories in New York. Dr. Cox, an authority on Rickettsial diseases, is the recipient of many honors, both in America and in Europe.

Professors at Indiana State who have been president of the Indiana Academy of Science were Drs. Dryer (1911), Rettger (1929), and Mackell (1947).

Rose Polytechnic Institute was for some decades one of the outstanding engineering and scientific schools of America. During its early years it contributed much to the Indiana Academy of Science. Of its relatively small faculty, five have served as president of the Academy: T. C. Mendenhall (1890), W. A. Noyes (1894), Thomas Gray (1897), C. A. Waldo (1898), and C. L. Mees (1904), although two of these five (Mendenhall and Waldo) served after leaving Rose. Thirty-three former or present faculty members are sketched in this volume.

One of the great teachers at Rose was Thomas Gray, who served as professor of dynamic engineering for 20 years. He was the author of many papers on seismology and engineering. Another great scientist, Mendenhall, was president of the Institute from 1886 to 1889. He was the author of many papers, and was president of the American Association for the Advancement of Science in 1889. One of America's foremost chemists, Dr. Noyes, was professor of chemistry from 1886 to 1903. Dr. Waldo was professor of mathematics from 1883 to 1891. He was the author of textbooks and scholarly papers and influenced his many students and co-workers in numerous ways. Dr. Mees, another president of Rose Polytechnic, was an outstanding physicist. His years at Rose left a strong impression on the student body and upon the faculty. Dr. E. S. Johonnott was professor of physics from 1899 to 1925. He was a student of Dr. Michelson's at Chicago and contributed many papers to the Academy and to the national scientific journals.

Of the alumni of Rose, 43 are sketched in this volume. Three of these have been starred in *American Men of Science*: J. A. Parkhurst in astronomy and E. S. Johonnott and C. E. Mendenhall in physics. Several of the younger graduates are making great names for themselves. Leroy Wilson has climbed gradually from electrical engineer to his present position as president of the American Telephone and Telegraph Company.

Of the former members of the faculties of these two institutions, memorial portraits of the following have been published in the necrology pages of the various *Proceedings* of the Academy: U. O. Cox, Fred Donaghy, C. R. Dryer, B. W. Evermann, R. G. Gillum, Thomas Gray, O. P. Jenkins, Edwin Johonnott, W. A. McBeth, C. L. Mees, T. C. Mendenhall, W. A. Noyes, Josiah Scovell, F. C. Wagner, and C. B. Waldo.

SCIENCE AT VALPARAISO UNIVERSITY

With the aid of A. H. Meyer, Valparaiso University

For some decades Valparaiso University was widely respected as a college where outstanding ability was recognized. Hence, numerous talented young men who were financially poor were attracted there. The number of alumni who have become distinguished is notable, especially in consideration of the fact that enrolments were small. Four scientists who were later starred in *American Men of Science* as especially distinguished in research were graduated from Valparaiso 1893-1910. During those years only two Indiana colleges or universities graduated more subsequently-starred scientists than did Valparaiso, and one of these graduated only one more. Just two additional Indiana schools graduated in these years more than one subsequently-starred scientist.

Valparaiso's starred alumni are J. A. Anderson, '00 (astronomy); C. D. La Rue, '10 (botany); C. P. Stone, '10 (psychology); and J. E. Teeple, '93 (chemistry).

Other alumni scientists who are widely known include Ruben L. Kahn, '09, Henry G. Mundt, '06, and D. B. Phemister, '99 (prominent physicians and surgeons); and J. W. Yussey, '82, an especially distinguished mathematician.

Of the scientists sketched in this volume, Valparaiso graduated 50 and employed 33 for at least two years. It ranks eighth among Indiana schools in both of these categories.

Valparaiso University was relatively strong 1890-1910 in pharmacology, chemistry, and engineering.

SCIENCE AND SCIENTISTS AT EARLHAM COLLEGE

Of the scientists sketched in this volume, Earlham College graduated 94 and employed 41 at least briefly.

Earlham College has graduated eight scientists who have been starred in *American Men of Science* as especially distinguished in research. They, with their science and college class, are: W. C. Allee, '08, and C. Grave, '95 (zoology); H. E. Howe, '01, W. M. Stanley, '26, and R. B. Warder, '66 (chemistry); P. E. Goddard, '92 (anthropology); L. C. Petry, '07 (botany); and W. R. Miles, '08 (psychology). Of these, Allee and Stanley are members of the National Academy of Science, and Stanley has won a Nobel prize. Only two Indiana schools (Indiana University and DePauw) have as many college alumni who have been starred.

Earlham College has had on its faculty two starred scientists, especially the prominent chemist H. N. Holmes (1907-14). Two of its faculty have been president of the Indiana Academy of Science, D. W. Dennis (1900) and M. S. Markle (1945).

Of 14,000 graduates of American colleges who obtained doctorates in science 1936-45, 11 obtained their college degree from Earlham. Four of these won doctorates in zoology, two in chemistry, and one each in biochemistry, botany, geology, physics, and public health.

In relation to the number of male graduates of 1924-1934 who were sketched in American Men of Science 1949, Earlham ranked fourth among all American colleges and universities. (DePauw ranked eighth, Wabash 36, Butler 47, according that study, in *Science,* May 11, 1951.)

Other prominent alumni include Daniel Shoemaker, '94, and E. O. Wooten, '89, long botantists with the U. S. D. A., and A. D. Hole, '97, long professor of geology at Earlham. Harold Urey, Indiana's first Nobel prize winner, became interested in research while a student at Earlham under the starred chemist Holmes. (Urey graduated elsewhere.)

SOMETHING AS TO SCIENTISTS AT OR FROM OTHER INDIANA COLLEGES

Separate summaries are given in this chapter as to science and scientists at Butler, DePauw, Earlham, Indiana, Indiana State Teachers, Notre Dame, Rose, Valparaiso, and Wabash. Here are a few comparable facts as to other Indiana colleges.

Of the scientists sketched in this book, Manchester College graduated 31, Hanover 21, Franklin 19, Indiana Central 18, Evansville 11, Marion ten, Taylor and Tri-State each nine, Ball State, Goshen, and Oakland City each eight, Moores Hill (now Evansville College) six, Danville (now Canterbury) four, Winona and Indiana Technical College (Ft. Wayne) each two, and St. Joseph's and St. Mary's each one.

Of the alumni of these colleges, seven have been starred in *American Men of Science* as especially distinguished in research. These with college, science, and class are: *Evansville,* J. F. Dashiel, '08 (psychology); *Franklin,* O. W. Caldwell, '94 (botany); *Hanover,* C. R. Barnes, '77, J. M. Coulter, '70, S. Coulter, '77 (botany), and H. W. Wiley, '67 (chemistry); and *Manchester,* D. J. Flory, '31 (chemistry).

Of 14,000 graduates of American colleges who obtained doctorates in science in American universities 1936-45, 60 had obtained their college degree from one of the aforementioned Indiana colleges. The number from each and the doctoral field are as follows: *Ball,* five (chemistry two, mathematics, physics, and entomology one each); *Canterbury,* one; *Evansville,* seven (all chemistry); *Franklin,* four (chemistry three); *Goshen,* four; *Hanover,* eight (chemistry five, geology, mathematics, and botany one each); *Indiana Central,* three (zoology two, botany one); *Manchester,* 21 (chemistry

14, physics three, physiology two, botany and entomology one each); *Marion*, one; *Oakland City*, three (mathematics two); *St. Joseph's*, *St. Mary's* and *St. Mary-of-the-Woods*, one each.

Of the present or former members of the faculties of these colleges, the following have been president of the Indiana Academy of Science: *Hanover,* Glenn Culbertson; *Indiana Central,* W. P. Morgan; *Moores Hill,* A. J. Bigney.

SCIENTISTS AND SCIENCE AT ELI LILLY AND COMPANY

With the Aid of John S. Wright

Eli Lilly and Company is second only to the Standard Oil Company of Indiana among the Indiana industrial concerns in the number of scientists sketched employed. A total of 108 have been employed for two years or longer. Many of the Lilly men are highly resourceful and have contributed notably to science. Three have been starred in *American Men of Science* and one, after he left Indiana, was elected to the National Academy of Sciences. Some of those who have won recognition for their scientific achievements are Drs. G. H. A. Clowes, K. K. Chen, Irvine H. Page, G. B. Walden, M. E. Krahl, Homer Smith, W. A. Hanley, E. D. Campbell, E. C. Kleiderer, W. W. Davis, T. P. Carney, J. A. Leighty, Ewald Rohrmann, R. M. Rice, F. B. Peck, K. G. Kohlstaedt, C. G. Weigand, C. G. Culbertson, J. M. McGuire, O. K. Behrens, J. H. Waldo, H. M. Powell, P. N. Harris, and Edward Swanson. The sketches of these men elsewhere in this volume tell something of their achievements. (Fuller statements may be found in *Who's Who in America* or in *American Men of Science.*)

Eli Lilly and Company has contributed significantly to Indiana science in at least four ways: (1) It has developed commercially drugs discovered elsewhere. Examples are insulin, discovered at the University of Toronto, and liver extract, discovered at Harvard. The difficult work of their refinement, production, and distribution at a reasonable price was done by Eli Lilly and Company. (2) Several highly significant drugs were discovered by the Lilly research scientists. Examples are 'Amytal' and 'Seconal'. (3) Eli Lilly and Company affords employment and exceptionally favorable working conditions to numerous young men of promise, aiding them to become productive research men. In addition to the 108 men sketched in this volume are numerous Lilly employees who have contributed significantly, or who will in time win recognition as scientists. (4) In 1935 Eli Lilly and Company began making annual awards to scientists under thirty-five years of age selected by the American Chemical Society for outstanding achievement. Since then similar awards have been made available through four additional national associations for advancement of knowledge pertaining to health, disease, and therapy. Each award consists of a medal, a prize of $1,000, and a travel fund of $150. To 1950 there have been forty-three such awards. Eli Lilly and Company has no part in selecting the winners. It merely pays the awards on certification of the winner by one of the five associations that make the selections.

COMMERCIAL SOLVENTS AND MEAD-JOHNSON AND SCIENCE

These two concerns have employed for two years or longer about 50 and 12, respectively, of the scientists sketched in this volume. In addition to affording these men, and many others, opportunities to do research, they merit special mention in another way. Both of them have followed the example set by Eli Lilly and Company of awarding a $1,000 prize annually for outstanding research done in some field of special interest to them. The Mead-Johnson prize has been annually for several years; the Commercial Solvents prize was established in 1950.

BIOLOGY AND BIOLOGISTS AT PURDUE UNIVERSITY

The biologists at Purdue University are scattered through several departments. Botanists, bacteriologists, zoologists, and one biophysicist are employed by the Department of Biological Sciences in the College of Science. In the Agricultural College several of the departments have biologists on the staff; among them are Botany, and Plant Pathology, Forestry, Horticulture, Entomology, and Animal Husbandry.

A succession of Purdue botanists starred in *American Men of Science* includes: J. C. Arthur, Stanley Coulter, Max Gardner, H. S. Jackson, J. S. Karling, and E. B. Mains. Most of these men have headed either the Department of Biological Sciences or the Department of Botany and Plant Pathology. Other starred botanists who were on the faculty for shorter periods were H. L. Bolley, F. D. Kerns, D. T. MacDougal, and C. R. Orton. One starred zoologist, F. M. Webster, has been on the Purdue faculty (1884-88).

Purdue professors in biological departments who have been president of the Indiana Academy of Science are J. C. Arthur, Stanley Coulter and C. L. Porter (botanists), C. C. Davis and H. E. Enders (zoologists), and C. D. Behrens (bacteriologist).

A considerable number of graduates in biology at Purdue have become significant scientists, but only one with a college degree (H. L. Bolley '88) has been starred in *American Men of Science*. C. H. Werkman, who graduated in bacteriology in 1919, has, however, been elected to the National Academy of Sciences. Many of the faculty and alumni have worked on aspects of their subjects of practical significance but which, under the restricted system used for starring in *American Men of Science,* rate less high than certain aspects of less immediate practical significance.

An outgrowth of the department of biology (now Biological Sciences) is the department of forestry, established partly as a result of Dean Stanley Coulter's great interest in forestry. One phase of the forestry work meriting mention is conservation. (A summary as to conservation is given elsewhere in this chapter.)

During the decade 1936-45 Purdue University conferred five doctorates in botany, four in zoology, and one in bacteriology. Of those who obtained doctorates in the biological sciences in American universities in that decade, 21 had obtained their college degree at Purdue, as follows: in bacteriology, four; in botany, seven; entomology, two; genetics, one; zoology, six; and physiology, one.

CHEMISTRY AND CHEMISTS AT PURDUE UNIVERSITY

By F. J. Allen, Purdue University

It is the purpose here to set forth briefly the development of the department of chemistry at Purdue University. Those in charge of the work are mentioned, with dates of their tenure as department head.

Harvey W. Wiley gave chemistry its start at Purdue when the University opened in 1874. That it was only a small beginning is shown by the fact that Wiley served also as professor of physics, state chemist, and director of military work. Wiley is best known in connection with pure food laws, which were practically his life work after 1883, the year he left Purdue.

Robt. B. Warder (1883-87), like Wiley, was state chemist in addition to teacher of chemistry. John Ulric Nef (1887-89) started some of the researches which subsequently made him nationally famous. Winthrop Ellsworth Stone had a great influence both as head of chemistry (1889-1900) and as president of the University for 21 years. Percy Norton Evans (1900-25) served as head and professor of organic chemistry until his death. As division heads under Evans were R. H. Carr in agricultural chemistry, L. A. Test in general chemistry, E. G. Mahin in quantitative analysis, A. R. Middleton in qualitative analysis, and F. O. Anderegg in physical chemistry. J. H. Ransom, one of Purdue's great teachers, also served as head of general chemistry under Evans (1909-18). In the period 1874-1924, only 16 men had served as full professors.

In 1922 Edward C. Elliott became the president of Purdue University and greatly expanded research.

R. B. Moore (1926-30) succeeded Dr. Evans as head of chemistry and in addition was dean of the school of science. Dr. Moore, long with the Bureau of Mines, had an international reputation for his work on radium and helium. In spite of poor health, he played a tremendous role in a few years in promoting research and in supervising plans for a new building, which he saw partially occupied in 1930.

A. R. Middleton had served as acting head of the department 1925-26, and was called on again in 1931. The professorial staff about this time was as follows: R. C. Corley in biological chemistry; Middleton and L. A. Test in inorganic; M. G. Mellon in analytical; R. E. Nelson, H. B. Hass, and E. F. Degering in organic; R. F. Newton, T. DeVries, F. D. Martin, J. F. Chittum, and H. Hunt in physical; and R. H. Carr in food chemistry.

H. B. Hass (1937-49) assumed the headship in 1937. He held to high standards for the undergraduate courses, but will probably be best remembered for his research interests and the development of graduate work.

E. T. McBee (1949-), an expert in fluorine chemistry, succeeded Dr. Hass, who left to become research director in chemical industry. As of September, 1950, the chemistry staff of professorial rank consisted of A. A. Alberts, F. J. Allen, G. B. Bachman, C. Beatty, R. A. Benkeser, W. W. Brandt, J. H. Brewster, H. C. Brown, R. C. Corley, T. De Vries, W. F. Edgell, H. Feuer, H. Hunt, H. W. Johnston, N. Kornblum, R. L. Livingston, E. T. McBee, F. D. Martin, M. G. Mellon, H. C. Reitz, A. L. Rocklin, A. W. Searcy, and W. E. Truce—this in contrast to the one-man staff of Harvey Wiley in 1874.

The number of degrees given each year in each of several categories are shown in a table not reproduced here.

In brief: the first master's degree was given in 1886 but only two before 1889, when five were given. In most years since 1889 several were given, until 1937, since which date 11 to 56 have been awarded annually nearly every year. The total to 1951 is 373. Masters' degrees in chemistry and metallurgy 1924-50 total 175. Masters' in agricultural chemistry 1925-50 total 40. The total of masters' in pharmacy is 197. They started in 1929. The grand total of masters' degrees in chemistry and allied fields is 3,172, with 100 to 200 awarded in 1933, in 1939-42, and in 1946, and with totals of 226 to 486 annually in more recent years.

One Ph.D. was awarded in chemistry in 1897 but no other until 1930. During the next five years, 12 were awarded, and commencing in 1935, from five to 27 per year, with a total to 1951 of 267. A doctorate in "chemistry and metallurgy" was first awarded in 1935, since which date from one to eight have been awarded annually except twice. The total to 1951 is 48. Doctorates in agricultural chemistry began in 1933, reached a total of 43 in 1950. Pharmacy doctorates (Ph.D.) commenced in 1932, reached a total of 52 in 1950.

diana University have become industrial chemists. Among the more successful, sketched in this volume, are: Paul Carlisle, J. N. Currie, George Hale, E. C. Medcalf, K. W. Ray, W. J. Sparks, E. H. Stuart, and Verling Votaw. Several alumni have become prominent business executives; two sketched here as scientists are W. H. Bell and Judson West.

Both faculty and alumni have made numerous chemical discoveries and have received many patents. Several have become wealthy. Professor Briscoe's elementary textbook has been very widely used, and treatises by Shriner and Gucker are also widely recognized.

The first Ph.D. was awarded in 1921. By 1951, 149 had been awarded, 70 during 1936-45. In 1950, the faculty consisted of 17 men with a rank above instructor. The full professors were H. G. Day, F. T. Gucker, F. Haurowitz, F. C. Mathers, and C. E. May. In 1950, there were 21 research fellowships and research assistantships financed by grants totaling $76,000 from industrial concerns, foundations, and federal agencies.

Alumni who were awarded LL.D. degrees at the dedication of the Chemistry Building in 1931 are Earl Blough, J. N. Currie, F. Isobe, O. C. Martin, O. H. Perry, and L. F. Rettger. Other alumni who have attained high rank in other fields include Donald Ballman, Roy Bonsib, Lyle Gilbertson, Deloso Grant, George Hale, Russel Hardy, J. R. Krebler, Herschel Newsom, Fred Shetterly, Milo Summerville, Louis Watson, and H. F. Willkie.

PHYSICS AND PHYSICISTS AT INDIANA UNIVERSITY

Physics, then often called natural philosophy, was taught at Indiana University as early as 1831. Theopholis A. Wylie taught it 1837-86, with some gaps, one of which was filled by Richard Dale Owen, who taught "physical science" for several years following 1863. Upon Dr. Wylie's retirement in 1886, J. P. Naylor became head of the newly-established department of physics. He left in 1891 for DePauw, and was succeeded by Benjamin W. Snow, who after a year went to Wisconsin. Arthur L. Foley, a student of Naylor's, became an instructor in 1890 and head of the department in 1897, where he served until he retired in 1938. Distinguished especially for his work on sound, particularly as related to locomotive whistles, acoustic horns, microphones, and architecture, he was starred in *American Men of Science,* as were two of his students, C. T. Knipp, '94, and F. C. Brown, '04. His college textbook, completed shortly before he retired, has been widely used. Dr. Foley and one of his associates, R. R. Ramsey, were president of the Indiana Academy of Science in 1909 and in 1930, and another member of the faculty, M. E. Hufford, was vice president in 1948. A fourth, J. B. Dutcher, was classed by many as an exceptionally successful teacher.

Dr. Foley's successor as head of the department is Allan C. G. Mitchell, also starred. Under him, staff and facilities have expanded notably, associated in part with moving into expanded quarters in a building finished in 1940. The equipment includes a cyclotron which delivers beams of high energy particles.

The research since 1938 has consisted largely of work in nuclear and theoretical physics. The outstanding recent contribution has been in nuclear spectroscopy, by Mitchell, L. M. Langer, and R. G. Wilkinson.

Work with the cyclotron, under the supervision of M. B. Sampson, is directed toward the study of nuclear energy levels excited as a result of high energy reactions. E. J. Konopinski is in charge of theoretical physics and has made significant contributions to the theory of beta-ray decay and nuclear reactions. Cosmic rays are being studied by J. G. Retallack and R. W. Thompson. Charles Hire is in charge of beginning physics lectures.

During the decade 1936-45, the department conferred 21 doctorates. Its earlier success with undergraduate students is implied by the fact that of the persons who obtained doctorates in physics anywhere in the United States in that decade, 14 had their undergraduate work at Indiana University. This is in contrast to five, the figure for the next highest Indiana school, and is 37 per cent of the total for the state.

ZOOLOGY AT INDIANA UNIVERSITY

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ZOOLOGY AT INDIANA UNIVERSITY

The department of zoology at Indiana University has long been widely considered one of the strongest in America. It has won this high reputation by the notable achievements of its faculty and alumni.

Although zoology was taught for decades before then, the subject first received considerable attention when David Starr Jordan became professor of zoology in 1879, when he was 28 years old. During the next 12 years, more than a score of students who later became prominent scientists studied under Jordan and did valuable research. Dr. Jordan himself did a large amount of scholarly work and much else that added to his reputation and that of Indiana University.

When Dr. Jordan left in 1891 to become president of Stanford University, one of his students, C. H. Eigenmann, became head of the department. Under his leadership, zoology at Indiana University continued to attract able students, several of whom later became distinguished. Dr. Eigenmann himself did such notable research that he was elected to the National Academy of Sciences, the first professor in the state to win that high recognition.

Upon Dr. Eigenmann's death in 1927, Fernandus Payne, a student of his, became head of zoology (and dean of the graduate school). The department continued to expand and grow in reputation. In 1950, its staff included the only Nobel prize winner in Indiana, H. J. Muller; two members of the National Academy of Science, Muller and T. M. Sonneborn; and other widely- and deeply-respected men, including, perhaps the most talked about professor in America, A. C. Kinsey.

Graduates of the department who have been starred in *American Men of Science* are Joel A. Allen, Ph.D. '86; A. M. Banta, '03; C. L. Edwards, '86; C. H. Eigenmann, '86; B. W. Evermann, '86; Stephen A. Forbes, Ph.D. '84; C. H. Gilbert, M.S. '82, Ph.D. '83; O. P. Hay, Ph.D. '84; C. Juday, '96; C. H. Kennedy, '02; W. L. McAtee, '04; N. E. McIndoo, '06; W. J. Moenkhaus, '94; F. Payne, '05; F. H. Pike, '03; and O. Riddle, '02.

Former or present faculty members who have been starred include, in addition to the alumni listed in the foregoing paragraph, D. S. Jordan, A. C. Kinsey, J. S. Kingsley, W. H. Manwaring, H. J. Muller, G. J. Pierce, T. M. Sonneborn, A. S. Warthin and Charles Zeleny. Several other faculty members or alumni have contributed notably to the advancement of zoology. These include W. R. Breneman, Lowell Coggeshall, S. D. Gerking, Ralph Hile, L. A. Krumholz, W. E. Ricker, Will Scott, J. R. Slonaker, T. W. Torrey, Ralph Voris, and W. J. Van Wagentonk.

Professors who became president of the Indiana Academy of Science were Jordan, in 1885-86, Eigenmann, in 1899, Moenkhaus, 1917, Payne, 1932, and Scott, 1935. These faculty members were all graduated from the department except Jordan. Alumni who have not been local professors who have served as president of the Academy are W. S. Blatchley, in 1903, Robert Hessler, in 1906, E. B. Williamson, 1918, and W. P. Morgan, 1951.

Additional alumni who have made significant contributions to zoology include W. R. Allen, O. P. Breland, Robert Bugbee, John Haseman, Leonard Haseman, T. H. Headlee, O. P. Jenkins, W. P. Morgan, N. E. Pearson, Meredith Runner, A. B. Ulrey, and Don Warren.

The first master's degree in zoology was given in 1882, the first doctorate in 1883. During the years 1883-92, fourteen Ph.D.'s were awarded (some of them semi-honorary). From 1893-1920 no doctorates were granted. During 1936-45, 13 doctorates were awarded. In 1950 there were many candidates.

An increasing proportion of the undergraduate students in the department are pre-medics. However, at the same time there are an increasing number of graduate students, attracted partly by the world-renowned faculty.

CHAPTER IV

ADDITIONAL DATA ON INDIANA SCIENTISTS

ESPECIALLY DISTINGUISHED INDIANA SCIENTISTS

Nobel prizes have been awarded to two natives of Indiana, W. M. Stanley and H. C. Urey, and to a resident, H. J. Muller. Of the American Association for the Advancement of Science, Dr. T. C. Mendenhall was president while he was president of Rose Polytechnic Institute; and Drs. D. S. Jordan and J. M. Coulter, leaders in science in Indiana 1875-91, were president after they left the state.

Nineteen Hoosiers have already been elected to the National Academy of Sciences: W. C. Allee, C. P. Berkey, J. S. Billings, L. A. DuBridge, C. A. Kraus, F. C. Mann, E. Merrit, W. A. Noyes, Jr., F. W. Reichelderfer, O. Riddle, V. M. Slipher, Lee J. Smith, W. M. Stanley, C. P. Stone, Lewis Terman, his son Frederick Terman, H. C. Urey, C. H. Werthman, and Clark Wissler. Four non-natives were elected while working in Indiana: C. H. Eigenmann, R. E. Cleland, T. R. Sonneborn, and Robert E. Wilson (Dr. Wilson was with the Standard Oil Company of Indiana and the others were at Indiana University). The following six persons who had taught in Indiana were elected after leaving the state: J. C. Branner, D. H. Campbell, J. M. Coulter, T. C. Mendenhall, W. A. Noyes, and B. F. Skinner. Of these, Mendenhall and Noyes were at Rose Polytechnic Institute, and Branner, Campbell and Skinner, at Indiana University. Coulter taught at Hanover and Wabash and was president of Indiana University 1891-93. One former employee of Eli Lilly and Company, Homer W. Smith, also has been elected to the Academy.

Eighty-one native Hoosiers have been starred in *American Men of Science,* by secret vote of their fellow workers, as especially distinguished in research. Thirty-one who later won stars came into Indiana for their college training. The names of these men are given in the section on starred scientists in Chapter V. About 50 former Indiana faculty members who were neither natives nor graduates of Indiana schools have also been starred, most of them after leaving Indiana. Three former employees of Eli Lilly and Company and two of Standard Oil of Indiana have also been starred, as have two former high school teachers—none of them natives or local alumni. The ex-faculty members are listed in the summaries as to the leading universities in Chapter III.

Thus, 164 starred scientists are sketched in this volume and comprise nearly four per cent of the number of persons sketched.

Of these 164, Indiana University graduated (college degree) 32 and employed 36; Purdue graduated five, employed 18 (several of them briefly); DePauw graduated 12, employed four; Wabash graduated six, employed five; Earlham graduated eight, employed two; Rose Polytechnic graduated three, employed four; Hanover graduated four, employed two; Butler graduated three, employed two; Notre Dame graduated one, employed two; Valparaiso gave four their first college degree, while Evansville, Franklin, and Manchester each graduated one. (The names of the graduates are given in the special section dealing with starred scientists in Chapter V, as well as in sketches.)

PRESIDENTS OF THE INDIANA ACADEMY OF SCIENCE, 1885-1951

Chronologically, By Science, and By Institution

1885–86	Jordan, David S.
1887	Coulter, John M.
1888	John, J. P. D.
1889	Branner, John C.
1890	Mendenhall, T. C.
1891	Hay, O. P.
1892	Campbell, J. L.
1893	Arthur, J. C.
1894	Noyes, W. A.
1895	Butler, Amos W.
1896	Coulter, Stanley
1897	Gray, Thomas
1898	Waldo, C. A.
1899	Eigenmann, C. H.
1900	Dennis, D. W.
1901	Thomas, M. B.
1902	Wiley, Harvey W.
1903	Blatchley, W. S.
1904	Mees, C. L.
1905	Wright, John S.
1906	Hessler, Robert
1907	Mottier, D. M.
1908	Culbertson, Glenn
1909	Foley, A. L.
1910	Evans, P. N.
1911	Dryer, C. R.
1912	Naylor, L. R.
1913	Bodine, Donaldson
1914	Burrage, Severance
1915	Cogshall, W. A.
1916	Bigney, A. J.
1917	Moenkhaus, W. J.
1918–19	Williamson, E. B.
1920	Bruner, H. L.
1921	Enders, Howard E.
1922	Andrews, F. M.
1923	Behrens, Charles A.
1924	Deam, C. C.
1925	Cumings, E. R.
1926	Blanchard, W. M.
1927	Wade, Frank B.
1928	Mahin, E. G.
1929	Rettger, Louis J.
1930	Ramsey, Rolla R.
1931	Davis, J. J.
1932	Payne, F.
1933	Lyon, M. A.
1934	Nieuwland, G. A.
1935	Scott, Will
1936	Friesner, R. C.

1937	Edington, Will
1938	Lilly, Eli
1939	Yuncker, T. G.
1940	Wallace, Frank
1941	Weatherwax, Paul
1942	Mellon, M. G.
1943	Just, T.
1944	Malott, C. A.
1942	Markle, M. S.
1946	Degering, E. F.
1947	Mackell, J. F.
1948	Welch, Winona
1949	Porter, C. L.
1950	Visher, S. S.
1951	Morgan, W. P.

By Science

ARCHEOLOGY: Lilly

ASTRONOMY: Campbell, Cogshall

BACTERIOLOGY: Hessler, Burrage, Behrens

BIOLOGY: Dennis

BOTANY: Arthur, J. M. and Stanley Coulter, Thomas, Wright, Mottier, Andrews, Deam, Nieuwland, Friesner, Yuncker, Weatherwax, Just, Markle, Welch, Porter

CHEMISTRY: Noyes, Wiley, Evans, Blanchard, Wade, Mahin, (Nieuwland), Mellon, Degering

ENTOMOLOGY: Blatchley, Bodine, Williamson, Davis, Wallace

GEOGRAPHY: Dryer, Visher

GEOLOGY: Branner, Culbertson, Cumings, Malott

MATHEMATICS: John, Waldo, Edington

PHYSICS: Mendenhall, Gray, Foley, Mees, Naylor, Ramsey, Mackell

PHYSIOLOGY: (Moenkhaus), (Rettger)

ZOOLOGY: Jordan, Hay, Butler, Eigenmann, Bigney, Moenkhaus, Bruner, Rettger, Payne, Lyon, Scott, Morgan

By Institution

BUTLER: Hay, Bruner, Friesner

DEPAUW: John, Naylor, Blanchard, Edington, Yuncker, Welch

EARLHAM: Dennis, Markle

ELI LILLY AND CO: Wright, Hessler, Burrage, Lilly

HANOVER: Culbertson

INDIANA CENTRAL: Morgan

INDIANA STATE: Dryer, Rettger, Mackell

INDIANA STATE GOVERNMENT: Butler, Blatchley, Deam, Wallace

INDIANA: Jordan, Branner, Eigenmann, Mottier, Foley, Cogshall, Moenkhaus, Andrews, Cumings, Ramsey, Payne, Scott, Weatherwax, Malott, Visher

MOORES HILL: Bigney

NOTRE DAME: Nieuwland, Just

PURDUE: Arthur, S. Coulter, Waldo, Wiley, Evans, Enders, Behrens, Mahin, Davis, Mellon, Degering, Porter

ROSE: Mendenhall, Noyes, Gray, Mees

SHORTRIDGE H. S: Wade

WABASH: J. M. Coulter, Campbell, Thomas, Bodine

PRIVATE: Williamson, Lyon

VICE-PRESIDENTS OF THE INDIANA ACADEMY OF SCIENCE

1886	Coulter, J. M.
1887	John, J. P. D.
1888	Branner, J. C.
1889	Mendenhall, T. C.
1890	Hay, O. P.
1891	Campbell, J. L.
1892	Arthur, J. C.
1893	Noyes, W. A.
1894	Butler, A. W.
1895	Coulter, Stanley
1896	Gray, Thomas
1897	Waldo, C. A.
1898	Eigenmann, C. H.
1899	Dennis, D. W.
1900	Thomas, M. B.
1901	Baker, P. S.
1902	Blatchley, W. S.
1903	Mees, Carl L.
1904	Culbertson, Glenn
1905	Hessler, R.
1906	Mottier, D. M.
1907	Culbertson, G.
1908	Foley, A. L.
1909	Evans, P. N.
1910	Dryer, C. R
1911	Dennis, D. W.
1912	Bodine, D.
1913	Burrage, S.
1914	Foley, A. L.
1915	McBeth, William A.
1916	Butler, Amos W.
1917	Morrison, Edwin
1918–19	Stoltz, Charles
1920	McBeth, W. A.
1921	Andrews, F. M.
1922	Behrens, C. A.
1923	Payne, F.
1924	Smith, C. M.
1925	Stoltz, C.
1926	Rettger, L. J.
1927	Breeze, F. J.
1928	Hess, Walter N.
1929	Nieuwland, J. A.
1930	Markle, M. S.
1931	Yuncker, T. G.
1932	Lieber, Richard
1933	Markle, M. S.
1934	Fisher, M. L.
1935	Edington, W. E.
1936	Kintner, Edward
1937	Malott, C. A.
1938	Yuncker, T. G.
1939	Test, L. A.
1940	Visher, S. S.
1941	Degering, E. F.
1942	Just, Theodor
1943	Porter, C. L.
1944	Abbott, R. B.
1945	Mackell, J. F.
1946	Pearson, N. E.
1947	Bechtel, A. R.
1948	Hufford, M. E.
1949	Visher, S. S.
1950	Christy, O. B.
1951	Switzer, J. E.

OTHER OFFICERS OF THE INDIANA ACADEMY OF SCIENCE

Secretary

1886–93	Butler, A. W.
1894	Waldo, C. A.
1895–04	Wright, J. S.
1905–07	McMullen, L. B.
1908, 09	Ransom, J. H.
1910	Benton, G. W.
1911–15	Bigney, A. J.
1916–20	Enders, H. E.
1921–23	Hess, W. N.
1924, 25	Anderson, Flora
1926–35	Friesner, R. C.
1936, 37	Test, L. A.
1938–40	Allyn, W. P.
1941–47	Welch, Winona
1948, 49	Christy, O. P.
1950, 51	Dailey, W. A.

Editor of the Proceedings

1891–93	Hay, O. P.
1894	Noyes, W. A.
1895	Coulter, Stanley
1896–98	Waldo, C. A.
1899–01	Benton, G. W.
1902–05	Bodine, D.
1906	Martin, E. G.
1907	Foley, A. L.
1908	McMullen, L. B.
1909, 10	Bruner, H. L.
1911, 12	Rettger, L. J.
1913	Deam, C. C.
1914–16	Barnard, H. E.
1917–19	Bennett, L. F.
1920	Payne, F.
1921	Breeze, F. J.
1922	Payne, F.
1923–28	Davis, J. J.
1929–34	Cain, S. A.
1935–40	Weatherwax, P.
1941-43	Edwards, P. D.
1944, 45	Corley, R. C.
1946, 47	Edwards, P. D.
1948	Gantz, E. S.
1949, 50	Lindsey, A. A.

Treasurer

1886–91	Jenkins, O. P.
1892, 93	Waldo, C. A.
1894–97	Shannon, W. P.
1898–02	Scovell, J. T.
1903–09	McBeth, W. A.
1910–13	Moenkhaus, W. J.
1914	Cogshall, W. A.
1915–25	Blanchard, W. M.
1926	Smith, C. M.
1927–32	Lyons, M. W.
1933, 34	Weatherwax, P.
1935–50	Morgan, W. P.

Press Secretary (long terms)

1898–02	Benton, G. W.
1903–09	Abbott, G. A.
1913–22	Wade, F. B.
1923–29	Dietz, H. F.
1930–34	Edington, W. E.
1938–41	Edington, W. E.
1942–47	Palmer, C. M.
1948, 49	Daily, W. A.

CHARTER MEMBERS OF THE INDIANA ACADEMY OF SCIENCE

By Will E. Edington, DePauw University

Although the records as to certain of the following names are not clear, from the evidence now available, the charter members of the Academy (which includes persons who joined during the first year) were as here given. The dates of their birth and death, so far as known to me, are also given.

J. C. Arthur (1850-1942); Philip S. Baker (1851-1901); George W. Benton (1862-); A. J. Bigney (1864-1929); W. S. Blatchley (1859-1940); John C. Branner (1850-1922); A. W. Brayton (1848-1926); Ryland T. Brown (1807-90); J. B. Burris (1859-1935); Amos W. Butler (1860-1937); John L. Campbell (1827-1904); Arthur B. Chaffee (1852-); J. B. Conner; John M. Coulter (1851-1928); Stanley Coulter

(1853-1943); D. W. Dennis (1849-1916); C. R. Dryer (1850-1927); C. H. Eigenmann (1863-1927); B. W. Evermann (1853-1932); William H. Fogg; Morton W. Fordice (1864-1939); E. E. Glover; G. K. Green; Charles W. Hargitt (1852-1927); Oliver P. Hay (1846-1930); Robert Hessler (1861-1942); Orlando Hobbs; W. DeM. Hooper; J. N. Hurty (1852-1925); Henry A. Huston (1858-); Henry Jameson (1848-1924); O. P. Jenkins (1850-1935); J. P. D. John (1843-1916); D. S. Jordan (1851-1931); J. S. Kingsley (1854-1929); Daniel Kirkwood (1814-94); Lillien J. Martin (1851-1943); T. J. McAvoy; R. W. McBride (1842-1926); Jerome McNeill (1857-1928); Seth E. Meek (1859-1914); David R. Moore (1850-1932); Joseph Moore (1832-1906); David M. Mottier (1864-1940); W. H. Mushlitz; J. P. Naylor (1853-1938); Fletcher M. Noe; W. A. Noyes (1857-1941); H. L. Osborn (1857-); D. A. Owen (1852-1930); Richard Owen (1810-90); A. J. Phinney (1850-1942); A. B. Porter (1864-1909); G. W. Puterbaugh; E. R. Quick (1851-); W. H. Ragan (-1908); T. B. Redding (1831-95); J. T. Scovell (1841-1915); W. P. Shannon (1847-97); Frederich Stein; J. O. Stillson (1850-1926); S. P. Stoddard; Maurice Thompson (1844-1901); C. A. Waldo (1852-1926); Robert B. Warder (1848-1905); L. D. Waterman (1830-1918); F. M. Webster (1846-1916); Harvey W. Wiley (1844-1930); T. A. Wiley (1810-95).

INDIANA SCHOOLS AND DOCTORATES IN SCIENCE, 1936-45

Some Data from *The Baccalaureate Origins of the Science Doctorates Awarded in the United States 1936-1945,* Office of Scientific Personnel, National Research Council (Washington, D. C., June, 1948)

I. Science doctorates awarded by Indiana schools 1936-1945 are as follows:

Purdue: Agriculture, 7, Biochemistry 18, Botany 5, Chemistry 155, Engineering 16, Pharmacology 18, Physics 29, Physiology 5, Psychology 22, Zoology 4, other 6

Total - 285

Indiana U: Botany 9, Chemistry 68, Physics 21, Psychology 22, Zoology 13, other 9

Total - 130

Notre Dame: Chemistry 61, Mathematics 4, Metallurgy 4, Physics 8, other 4

Total - 81

Purdue ranked 16th in the number of doctorates awarded by institutions in the United States; Indiana U, 31st; and Notre Dame, 41st.

Indiana institutions (Purdue, Indiana, and Notre Dame) granted 496 of the 14,905 doctorates awarded, or 3.32 per cent.

II. Of those receiving doctorates in science in the United States 1936-1945, the number who received their college degree from each Indiana school represented, follows:

Ball 5, Butler 22, DePauw 103, Earlham 11, Evansville 7, Franklin 4, Goshen 4, Hanover 8, Indiana Central 3, Indiana State Teachers 7, Indiana U. 105, Manchester 21, Notre Dame 55, Oakland City 3, Purdue 117, Rose 6, Taylor 4, Tri-State 4, Valparaiso 5, Wabash 28, and Canterbury, Marion, St. Joseph's, St. Mary-of-the-Woods, and St. Mary's each 1.

526, or about 3.5 per cent of the baccalaureate degrees, came from Indiana schools.

Nineteen American institutions had given more baccalaureate degrees to recipients (1936-45) of science doctorates than had Purdue; 26 more than had Indiana U; 27 were above DePauw; and 58 above Notre Dame.

III. Of the doctorates awarded 1936-45 in *biology,* 35 went to persons who had been graduated from DePauw; 21, from Purdue; 12 each, from Butler and Indiana U; 8, from Wabash; and 5, from Notre Dame and from Earlham. Figures for other sciences follow:

Chemistry - Indiana U 62, Purdue 55, DePauw 46, Notre Dame 44, Wabash 18, Manchester 14, Evansville 7, Hanover 5, and Rose 5

Geology - DePauw 5, and Indiana 5

Mathematics - DePauw 4 (No other Indiana college even one)
Physics - Indiana 14, DePauw 5, and Purdue 5
Psychology - DePauw 7, Indiana 7, and Purdue 6

WOMEN SKETCHED IN *INDIANA SCIENTISTS*

Of 199 women sketched in this volume, 46 give chemistry as their science, 54 are biologists (botany, zoology, biology, ecology, etc.), 25 are psychologists, 15 mathematicians, 15 nutrition experts, 11 physicists, six bacteriologists, five physiologists, five geologists, three geographers, three astronomers, three are in education, and one each in medicine, pharmacology, anthropology, public health, and textiles.

(Thirty-five names are so unusual that they give no indication to the writer and his associates of whether the bearers are men or women.)

Women scientists who may be especially mentioned here include Lillien Martin, the only woman sketched in this volume who was starred in *American Men of Science.* (She taught in the Indianapolis high schools before she was starred.) Kate Golden Bitting became a national authority on food preparation and preservation. Anne Lutz, a microtechnologist of distinction, was compared with Mme. Curie by *The New York Times.* Martha Doan served long as professor of chemistry and dean at Earlham. Winona Welch of DePauw has been the only woman to become president of the Indiana Academy of Science. Further information about these women is given in the sketches.

PLACES IN INDIANA WHERE INDIANA SCIENTISTS WERE BORN

Alphabetically, with the Number of Scientists from Each

Adams 1, Advance 2, Ahern 1, Akron 1, Alamo 2, Albany 3, Albion 1, Alexandria 2, Alfordsville 2, Allen Co. 1, Allensville 1, Alpine 1, Alton 2, Ambia 1, Amboy 2, Anderson 15, Andrews 2, Angola 5, Arcadia 3, Atherton 1, Atlanta 2, Attica 5, Atwood 1, Auburn 5, Aurora 9, Austin 1, Avilla 4.

Bainbridge 2, Bakers Corner 1, Bante 1, Bartholomew Co. 1, Batesville 5, Battleground 2, Bedford 10, Beechgrove 1, Benham 2, Bentonville 2, Berne 3, Bethlehem 1, Bicknell 2, Bippus 1, Birdseye 2, Bloomfield 5, Bloomingdale 4, Bloomington 26, Blountsville 1, Bluffton 6, Boone Grove 3, Boonville 4, Borden 2, Boswell 1, Bourbon 2, Bowling Green 1, Brazil 7, Bremen 1, Bridgeport 4, Bristol 4, Brook 2, Brooklyn 1, Brookston 2, Brookville 7, Brown Co. 1, Brownsburg 1, Brownstown 1, Browns Valley 1, Bryant 1, Bunker Hill 2, Burlington 3, Burnettsville 2, Burney 3, Butler 5.

Cadiz 1, Cambridge City 4, Camden 1, Campbellsburg 1, Cannelton 1, Carlos City 1, Carmel 1, Carroll 1, Carroll Co. 1, Carthage 2, Cass Co. 1, Castleton 2, Catlin 1, Center Point 1, Centerville 3, Chandler 1, Charlestown 4, Churubusco 1, Cicero 1, Cincinnati 1, Circleville 1, Clarkshill 2, Clarksville 1, Clay City 2, Clay Co. 4, Claypool 1, Clermont 1, Clinton 4, Clinton Co. 2, Cloverdale 2, Coal City 4, Coalmont 2, Coatesville 1, Colfax 4, College Corner 1, Columbia City 9, Columbus 7, Comiskey 1, Concord 1, Connersville 11, Converse 1, Cory 2, Craig 1, Crandall 1, Crawford Co. 1, Crawfordsville 14, Cromwell 2, Crothersville 1, Crown Point 4, Cuba 1, Culver 2, Curnettsville 1, Cynthiana 3.

Dale 3, Dalton 1, Danville 6, Darlington 2, Daviess Co. 2, Dayton 3, Dearborn Co. 1, Decatur 5, Decker 2, Deerfield 1, Delaware 1, Delphi 6, Demotte 1, DePauw 1, De Soto 1, Diamond 1, Dillsboro 3, Dunreith 1.

Eagletown 2, Earl Park 1, East Chicago 1, Economy 5, Edgerton 1, Edinburg 3, Edwardsport 2, Elberfeld 1, Elizabeth 3, Elizabethtown 1, Elkhart 14, Elkhart Co. 1, Elkinsville 1, Ellettsville 2, Elnora 3, Elwood 7, Emison 1, English 2, Eugene 1, Evansville 31.

Fairbanks 1, Fairfield 1, Fairmount 6, Farmersburg 1, Farmland 3, Fenton 1, Fishers 1, Flat Rock 1, Flora 2, Foresman 2, Fort Branch 2, Fortville 1, Ft. Wayne 52, Fountain City 1, Fowler 4, Fowlerton 1, Francisco 1, Frankfort 18, Franklin 6, Franklin Co. 1, Frankton 2, Fredonia 1, Freeland Park 1, Freelandville 1, Freetown 2, Fulton 1.

Galveston 4, Garrett 7, Gary 5, Gas City 2, Gaston 1, Geneva 1, Gent 1, Georgetown 3, Gibson Co. 1, Glenwood 2, Glezen 1, Goodland 5, Goshen 7, Gosport 1, Grabill 2, Grant 1, Grant Co. 4, Graysville 1, Greencastle 14, Greenfield 8, Greensburg 8, Greenwood 2.

Hagerstown 1, Hamilton 1, Hamilton Co. 2, Hammond 8, Hancock Co. 2, Haneys 1, Hanover 2, Hanover Co. 1, Harlan

1, Harrisburg 1, Harrison Co. 1, Harrodsburg 1, Hartford City 5, Hartsville 1, Hazelton 2, Headlee 1, Hebron 1, Henry Co. 1, Henryville 2, Hillsboro 2, Hobart 1, Holland 1, Holman 1, Holton 1, Honey Creek 1, Hortonville 1, Houston 1, Howard Co. 2, Howe 2, Hudson 1, Huntertown 1, Huntingburg 10, Huntington 14, Hymera 1.

Idaville 2, Indiana Harbor 1, Indianapolis 163, Inwood 1.

Jamestown 2, Japla 1, Jasonville 2, Jasper 5, Jay Co. 1, Jefferson Co. 3, Jeffersonville 11, Jennings Co. 1, Johnson Co. 1, Jonesboro 2.

Kempton 2, Kendallville 12, Kent 3, Kentland 1, Kewanna 3, Kirklin 1, Knightstown 2, Knightsville 1, Knox 1, Knox Co. 1, Kokomo 27, Kosciusko Co. 1, Kouts 1.

Ladoga 6, Lafayette and West Lafayette 46, La Fontaine 1, Lagrange 6, Lagrange Co. 1, Lagro 2, Lakeland 1, Lake Wawasee 1, Lapel 2, La Porte 13, Larwell 1, Lawrence 1, Lawrenceburg 8, Leavenworth 1, Lebanon 12, Lee 1, Lexington 1, Liberty 8, Lieters Ford 1, Ligonier 4, Lincolnville 1, Linton 10, Little York 1, Livonia 1, Lizton 1, Logansport 21, Loogootee 3, Lovett 1, Lowell 2, Lucerne 1, Lynn 1, Lyons 1.

McCoal 1, McCordsville 1, Macy 1, Madison 14, Madison Co. 1, Manhattan 1, Manilla 1, Marion 14, Marion Co. 1, Markle 2, Markleville 1, Marshall 5, Marshfield 1, Martinsburg 2, Martinsville 3, Mauckport 3, Maxwell 1, Mays 1, Medaryville 2, Melford 1, Mentone 2, Metamora 1, Mexico 1, Miami 1, Michigan City 9, Middlebury 3, Middletown 4, Milan 1, Milford 2, Millersburg 1, Millgrove 1, Millsboro 1, Milltown 1, Millville 1, Milroy 2, Mishawaka 9, Mitchell 3, Mongo 1, Monitor 1, Monon 1, Monroe Co. 1, Monroeville 1, Monrovia 3, Monticello 6, Montezuma 2, Montgomery 3, Montgomery Co. 2, Montmorenci 1, Montpelier 2, Moorefield 1, Mooreland 1, Moores Hill 5, Mooresville 4, Moran 1, Morocco 3, Morris 1, Morristown 2, Mt. Summit 1, Mt. Vernon 13, Mulberry 4, Muncie 20, Murray 1.

Napoleon 1, Nappanee 2, Nashville 2, New Albany 20, New Augusta 1, New Carlisle 1, Newcastle 8, New Goshen 1, New Harmony 1, New Haven 1, New Lancaster 1, New Lisbon 1, New Middletown 1, New Palestine 2, Newport 3, New Richmond 1, New Ross 2, Newton 1, New Waverly 1, Nineveh 1, Noblesville 8, North Judson 1, North Lancaster 1, North Liberty 3, North Manchester 14, North Salem 1, North Vernon 3.

Oakland City 4, Oaklandon 1, Oaktown 3, Odon 3, Ontario 2, Onward 1, Orange Co. 3, Orland 1, Orleans 6, Osgood 2, Ossian 2, Otwell 2, Owasco 1, Owensburg 1, Owensville 2, Oxford 4.

Paoli 5, Paragon 2, Paris Crossing 1, Parker 2, Parkersburg 1, Parr 1, Patoka 1, Patriot 3, Pekin 1, Pendleton 5, Pennville 2, Perkinsville 1, Peru 10, Petersburg 2, Petroleum 1, Pierceton 4, Pine Village 1, Pittsboro 1, Plainfield 7, Plainville 2, Pleasant 2, Plum Tree 1, Plymouth 4, Poe 1, Poland 1, Portland 8, Poseyville 1, Prairieton 1, Princeton 8, Pulaski Co. 1, Putnam Co. 3, Putnamville 2.

Raber 1, Randolph Co. 3, Raneys 1, Raysville 1, Redkey 3, Reelsville 1, Remington 7, Rensselaer 7, Reynolds 2, Richland 1, Richmond 50, Ridgeport 1, Ridgeville 2, Riley 1, Rising Sun 1, Riverside 1, Roachdale 2, Roanoke 1, Rob Roy 1, Rochester 5, Rockford 2, Rockport 7, Rockville 6, Rolling Prairie 1, Romney 1, Romona 1, Rosedale 2, Rossville 2, Royal Centre 2, Rugby 1, Rush Co. 2, Rushville 3, Russellville 6.

St. Bernice 1, St. Joseph Co. 1, St. Louis Crossing 2, Salamonia 1, Salem 13, Saline City 1, Saluda 1, Santa Claus 2, Saratoga 2, Scipio 2, Scottsburg 4, Sedalia 1, Seelyville 1, Selma 1, Seymour 5, Shadeland 1, Sharpsville 1, Sharptown 1, Shelburn 2, Shelbyville 11, Sheridan 6, Shipshewana 1, Shirley 2, Shoals 3, Silver Lake 1, Smithville 1, Solsberry 1, Somerset 1, Somerville 1, South Bend 41, Southport 3, South Whitley 2, Spartanburg 1, Spencer 3, Spencerville 1, Springfield 1, Springport 1, Springville 1, Spurgeon 2, Star City 1, Staunton 2, Stendal 2, Steuben Co. 2, Stewartsville 2, Stockwell 1, Straughn 1, Sullivan 3, Sullivan Co. 3, Summitville 2, Swayzee 2, Sweetser 1, Switzerland Co. 3, Sydney 2, Sylvania 1.

Tangier 2, Tell City 2, Templeton 1, Tennyson 1, Terre Haute 55, Thorntown 5, Tipton 7, Tipton Co. 2, Topeka 1, Trafalgar 3, Twelve Mile 1.

Union City 7, Union Co. 2, Uniondale 1, Union Mills 1, Unionville 1, Universal 1, Upland 5.

Vallonia 1, Valparaiso 7, Van Buren 1, Veedersburg 3, Vernon 3, Vevay 8, Vienna 1, Vigo Co. 2, Vincennes 13.

Wabash 10, Wabash Co. 3, Wadesville 1, Waldron 1, Walkerton 5, Warren 3, Warren Co. 1, Warrick Co. 1, Warsaw 8, Washington 5, Washington Co. 2, Waterloo 2, Wawpecong 1, Wayne Co. 2, Waynetown 4, West Baden 1, Westfield 2, West Lebanon 2, West Newton 2, Wheatland 1, Wheeling 1, Whitaker 1, White City 1, White Lick 1, Whiting 5, Whitley 2, Whitley Co. 3, Wilkinson 1, Williamsport 2, Willow Branch 1, Winamac 3, Winchester 2, Windfall 4, Wingate 1, Wolcott 2, Wolcottville 2, Worthington 4.

Yorktown 2, Yountsville 1.

Zionsville 5, Zoar 1.

NUMBER OF SCIENTISTS SKETCHED HEREIN WHO WERE BORN IN EACH INDIANA COUNTY

Arrangement Alphabetical

Adams 9, Allen 61, Bartholomew 13, Benton 13, Blackford 8, Boone 28, Brown 4, Carroll 14, Cass 33, Clark 20, Clay 24, Clinton 33, Crawford 8, Daviess 19, Dearborn 25, Decatur 10, De Kalb 21, Delaware 28, Dubois 18, Elkhart 33, Fayette 15, Floyd 23, Fountain 13, Franklin 12, Fulton 11.

Gibson 22, Grant 38, Greene 26, Hamilton 31, Hancock 19, Harrison 9, Hendricks 18, Henry 25, Howard 29, Huntington 24, Jackson 12, Jasper 16, Jay 16, Jefferson 23, Jennings 12, Johnson 18, Knox 25, Kosciusko 23, Lagrange 16, Lake 26, LaPorte 25, Lawrence 14.

Madison 38, Marion 179, Marshall 10, Martin 5, Miami 19, Monroe 34, Montgomery 36, Morgan 12, Newton 13, Noble 23, Ohio 1, Orange 13, Owen 10, Parke 24, Perry 3, Pike 10, Porter 13, Posey 21, Pulaski 7, Putnam 31, Randolph 24, Ripley 15, Rush 14.

St. Joseph 59, Scott 7, Shelby 16, Spencer 12, Starke 2, Steuben 10, Sullivan 12, Switzerland 18, Tippecanoe 58, Tipton 16, Union 11, Vanderburgh 31, Vermillion 10, Vigo 54.

Wabash 32, Warren 7, Warrick 8, Washington 19, Wayne 64, Wells 11, White 19, Whitley 17.

POPULATION (HUNDREDS) IN 1890 PER SCIENTIST BORN IN EACH COUNTY

Adams 22, Allen 11, Bartholomew 18, Benton 9, Blackford 13, Boone 9, Brown 26, Carroll 14, Cass 9, Clark 15, Clay 13, Clinton 8, Crawford 17, Daviess 14, Dearborn 9, Decatur 19, De Kalb 12, Delaware 10, Dubois 11, Elkhart 9, Fayette 8, Floyd 13, Fountain 15, Franklin 15, Fulton 15, Gibson 11, Grant 8, Greene 9.

Hamilton 8, Hancock 9, Harrison 23, Hendricks 12, Henry 10, Howard 9, Huntington 12, Jackson 20, Jasper 7, Jay 15, Jefferson 11, Jennings 12, Johnson 11, Knox 11, Kosciusko 12, Lagrange 10, Lake 9, LaPorte 14, Lawrence 14, Madison 10, Marion 8, Marshall 24, Martin 28, Miami 14, Monroe 5, Montgomery 8, Morgan 16.

Newton 7, Noble 10, Ohio 50, Orange 11, Owen 15, Parke 8, Perry 61, Pike 19, Porter 14, Posey 10, Pulaski 16, Putnam 7, Randolph 12, Ripley 13, Rush 14, St. Joseph 7, Scott 11, Shelby 16, Spencer 18, Starke 37, Steuben 14, Sullivan 18, Switzerland 7, Tippecanoe 6, Tipton 11, Union 6. Vanderburgh 19, Vermillion 13, Vigo 9, Wabash 8, Warren 16, Warrick 26, Washington 10, Wayne 6, Wells 20, White 8, Whitley 10.

THE COUNTIES WHICH WERE THE BIRTHPLACES OF MOST SCIENTISTS AS COMPARED TO THE POPULATION 1890, NUMBER PER 100 POPULATION

Monroe 5, Wayne 6, Tippecanoe 6, Union 6, Newton 7, Switzerland 7, Jasper 7, St. Joseph 7, Putnam 7, Montogomery 8, Marion 8, Grant 8, White 8, Clinton 8, Fayette 8, Hamilton 8, Parke 8, Wabash 8, Elkhart 9, Howard 9, Benton 9, Dearborn 9, Greene 9, Boone 9, Cass 9, Lake 9, Vigo 9, Henry 10, Madison 10, Lagrange 10, Posey 10, Washington 10, Noble 10, Whitley 10.

The counties that yielded one of these scientists per 800 or fewer of its 1890 population are mostly located in central Indiana. The southern third of the state has only Switzerland and Monroe counties, and the northern third only Newton, Jasper and St. Joseph. The counties which had a population of more than 1800 per scientist were in southern Indiana except two in northern Indiana (Starke and Marshall), and two on the border of the north (Adams and Wells). Most counties having 1500 to 1800 people per native scientist were also in southern Indiana. However northwestern Indiana has two, bordering Starke county. Three counties are in the southern margin of the central third of the state (Morgan, Shelby, Franklin) and three others in its northwestern part (Fountain, Warren and Vermillion).

This map displays a distinctly different pattern than that of the starred scientists. This reflects three conditions. The average starred scientist was born about 1875, while the average date of birth of all the scientists sketched in this book born in Indiana is 1890. In those 15 years, there had been notable changes, especially a decline in the southeastern part of the state, which had been most productive of starred scientists. The later map (not published here) reflects also less selection. The starred scientists are distinctly rarer than the average scientist.

A RECENT STUDY OF THE RATIO OF SCIENTIST ALUMNI TO OTHER ALUMNI

That a number of Indiana colleges and universities have been exceptionally successful recently in producing scientists is indicated by a study published while this book was in press. In *Science* for May 11, 1951, R. H. Knapp and H. B. Goodrich of Wesleyan University, (Conn.) report that of the male alumni of 1924-1934 the percentage who obtained doctorates in science and were sketched in *American Men of Science,* 1949 was especially large in four Indiana schools. Of the hundreds of American collegiate institutions, Earlham ranked fourth in this ratio, DePauw eighth, Wabash thirty-sixth, and Butler forty-seventh.

The fact that Indiana University and Purdue were not among the first fifty schools in this study reflects the fact that relatively many of the male graduates of these universities chose careers in non-scientific fields, including law, business, engineering, agriculture, medicine.

CHAPTER V

SPECIAL STUDIES OF INDIANA SCIENTISTS REPRINTED FROM PROCEEDINGS OF THE INDIANA ACADEMY OF SCIENCE

Living Indiana Scientists, A Statistical Study

H. E. Zabel and Stephen S. Visher, Chicago, Ill., and Indiana Univ.

The seventh, 1944, edition of "American Men of Science" contains sketches of 655 scientists living in Indiana, 1,288 scientists who were born in Indiana and 1,215 collegiate alumni of Indiana colleges and universities. Indiana universities conferred the doctorate upon 334 scientists and the Masters or Engineering degree upon 172 who have not received a doctorate. These several groups, subtracting duplicates, total 2,304 living Indiana scientists. An additional 349 scientists now living elsewhere were faculty members in Indiana.

Of the 655 scientists living in Indiana in 1943, slightly more than two-thirds are connected with universities and colleges; one-fifth are with industrial firms.

Purdue University with 198 sketched scientists has nearly one-third of the scientists in the state, and nearly one-half of those connected with educational institutions. Indiana University has 97, Notre Dame 39, DePauw 18, Butler 13, Rose Polytechnic 9, Valparaiso 9, Ball State 8, Earlham 7 and Wabash 7. Four colleges have 5 each: Goshen, Hanover, Manchester and Indiana State Teachers. Taylor and Franklin each have 4, Indiana Central and Evansville 3 and Marion 2. Seven colleges have one each (Huntington, Kokomo Jr., Oakland City, St. Francis, St. Joseph, St. Mary-of-the-Woods, and Tristate).

The industrial concerns with most sketched scientists are Eli Lilly 30, Standard Oil of Indiana 29, Commercial Solvents 16, Mead Johnson 9, Servel 7, Pittman-Moore 5, Reilly Tar and Chemical 3.

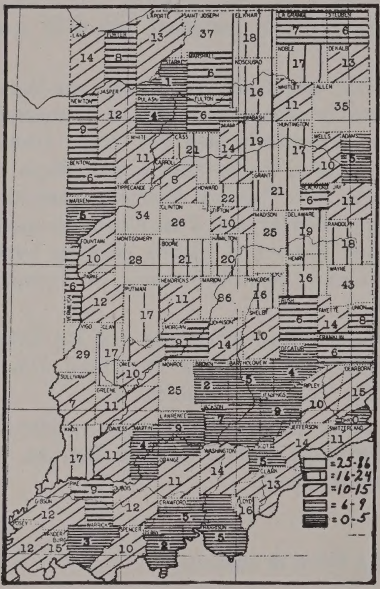
Indiana has a larger percentage of its sketched scientists employed by industrial concerns than is true for most states, because Indiana is more highly industrialized than are most states.

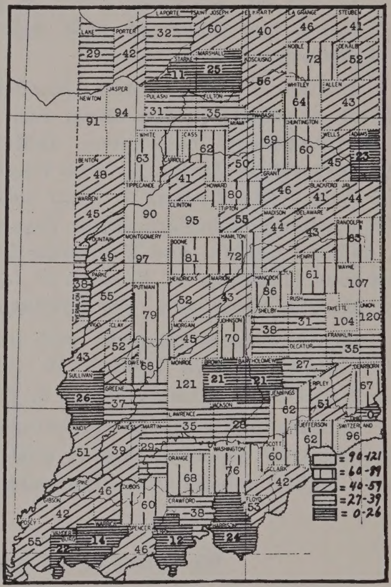
Birthplace of Scientists Born in Indiana

Indiana is given as their native state by 1,288 scientists sketched in the 1944 edition of "American Men of Science." Only six states yielded more, New York, Pennsylvania, Ohio, Illinois, Massachusetts, and Iowa. All but Iowa of these six states have notably larger populations than does Indiana. The states which rank eighth and ninth in the number of native scientists are Michigan and Wisconsin, both of which have about 200 fewer native scientists than Indiana.

Between the 1938 and 1944 editions of "American Men of Science," Indiana increased its contribution of scientists by 15 per cent, a greater increase than that of the total population. At about the average date of birth of the 1938 group, Indiana yielded 473 scientists per million population. For the 1944 group, the yield had increased to 494 per million. Both of these yield figures are relatively high as compared with the larger sections of the country, except New England. The yield of the South was 173 per million, of the North Atlantic States 400, of the North Central States 448, of the Rocky Mountain and Pacific States 470. Indiana's relatively high yield reflects several conditions, including the presence of relatively few negroes or other colored people, very few of whom have been recognized as scientists.

The birthplace by counties of the 1,265 scientists who gave their birthplace adequately to permit county location is shown on Map 1. The 22 counties which yielded most are Marion with 86, Wayne 43, St. Joseph 37, Allen 35, Tippecanoe 34, Vigo 29, Montgomery 28, Clinton 26, Madison 25, Monroe 25, Howard 22, Cass 21, Grant 21, Hamilton 20, Delaware 19, Wabash 19, Elkhart 18, Randolph 18, Clay 17, Knox 17, Noble 17, Putnam 17.





Map 1. Number of scientists sketched in American Men of Science 1944, born in each county.

Map 2. Yield of living scientists per 100,000 population in 1900 by counties.

Map 1 shows that none of the counties which produced 16 or more living scientists are in the southern part of the state, except Monroe, Knox and Floyd. Conversely most of the counties which yielded fewer than 10 scientists are in southern Indiana, but 10 such counties are in the northwestern part of the state and three in northeastern. Only the smallest county in the state (Ohio) yielded no scientist, and only one other (Starke) yielded only one. Brown and Perry each yielded 2.

In proportion to population at about the average date of birth of these scientists, which was about 1900, the rank of the counties is appreciably different. The 20 highest, in decreasing order, are Monroe, Union, Wayne, Fayette, Montgomery, Switzerland, Clinton, Jasper, Newton, Tippecanoe, Hancock, Boone, Howard, Putnam, Washington, Hamilton, Noble, Johnson, Wabash and Owen.

When mapped (Map 2), it is apparent that the high ranking counties are situated neither near the northern or southern margins of the state, except that Switzerland County ranks high. Three counties that produced more than one scientist per 1,000 of population at about the time of their birth are in the east, Wayne (Richmond) and its southern neighbors. Three other high counties, which produced one scientist to little more than 1,000 people, are Tippecanoe (Lafayette) and two neighbors. Other high counties are Monroe (Bloomington) and Newton, Jasper and Hancock. Most of the counties which produced 69-89 scientists per 100,000 people are close to the most productive counties. Exceptions are Washington (with Salem and Paoli) and Noble, whose noble name may possibly have helped some of its native sons to high achievement.

Five of the ten counties which yielded fewest scientists in proportion to population border the Ohio river. Three others are also in southern Indiana. Northwestern Indiana has, however, two counties which rank low and three others which rank relatively low. The central third of the state, north and south, contains no county which ranks very low and only one (Rush) which ranks relatively low.

These data on the yield of scientists in proportion to population when they were born indicates that the presence of a college where science is valued played an appreciable role. The counties where colleges were conspicuous in 1900 all rank high. Thus, Wayne, Montgomery, Monroe, Tippecanoe counties with Earlham and Wabash colleges, Indiana and Purdue universities, all rank in the upper tenth of the counties in yield. Putnam, with DePauw, also ranks in the upper one-sixth of the counties. Three other high counties are close to Purdue University (Clinton, Jasper, Newton). Another high county (Hancock) although it has no college, is situated not far from several colleges. Switzerland and Noble counties are the most conspicuous exceptions to the rule that the high counties either have a college or are relatively close to one.

Although most of the college influence in increasing the yield of scientists in proportion to population is due to educational stimulation, mention may be made of the fact that quite a number of scientists born in college towns are the children of professors.

Collegiate Alumni of Indiana

The A.B. degree or its counterpart was received by 1,215 persons sketched in "American Men of Science," 1944. Only seven states have more such alumni than has Indiana, namely New York, Massachusetts, Ohio, Pennsylvania, Illinois, California and Michigan. These states all have considerably larger college populations than does Indiana. It may be noted that Iowa, which was the birthplace of 4 more scientists than Indiana, falls behind Indiana in the number of scientific collegiate alumni. Conversely, Michigan and California, which were the birth-states of fewer scientists than was Indiana, have more alumni scientists.

The fact that Indiana was the birthplace of 1,288 scientists but conferred college training on 1,215 shows that 73 more embryo scientists went elsewhere for their college training than the number that came to Indiana colleges from other states. A comparable situation occurs in several other states, notably New York, Pennsylvania, Iowa, Missouri, New Jersey, Illinois and Kentucky. This shows that Indiana has failed somewhat to afford adequate educational facilities for future scientists, but Indiana has failed less badly than several other states have done. States that have afforded collegiate training to many more than their own native scientists are Massachusetts, California, Michigan, Connecticut and Washington.

The leading Indiana institutions in the collegiate training of these scientists are Indiana University with 331 such alumni, Purdue 253, DePauw 138, Wabash 95, Earlham 71, Valparaiso 64, Butler 54, Notre Dame 42, State Teachers 36, Manchester 22, Rose Polytech 22, Hanover 20, Franklin 14, Indiana Central 11, Goshen 9, Evansville (Moore's Hill) 9, Oakland City 8, Taylor 5, Marion 5, Tristate 4, St. Joseph 2, Huntington 2, Rochester 1.

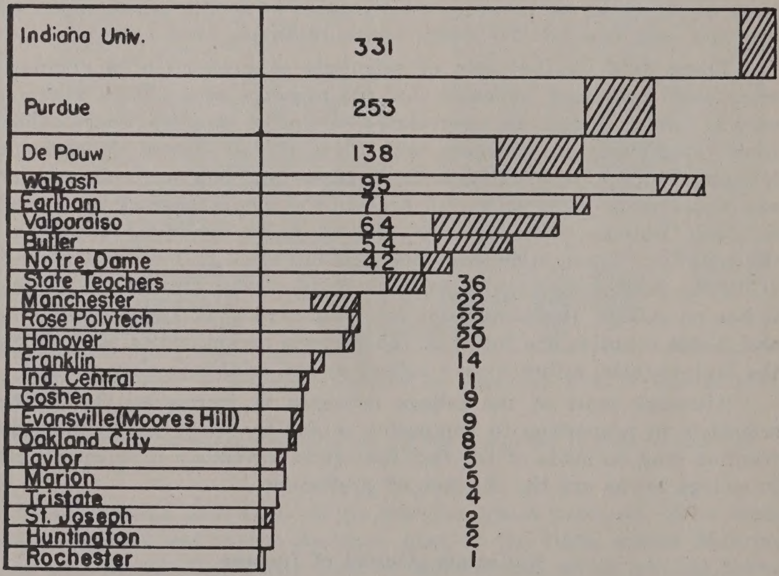


FIG. 3 NUMBER OF COLLEGIATE ALUMNI SKETCHED IN AMERICAN MEN OF SCIENCE 1944

SHADED PART SHOWS THE INCREASE OF 1944 OVER 1938 EDITIONS

In proportion to the number of their alumni, several of the smaller schools, notably DePauw, Wabash, Earlham and Valparaiso, have started more scientists than have either Indiana University or Purdue. This is partly because many Purdue alumni became engineers or farmers, and many Indiana University alumni became lawyers, physicians or high school teachers, a few members of which groups win recognition as scientists.

The increase in the number of alumni sketched in the 1944 edition over the number sketched in the 1938 edition is of interest. Purdue's increase was 44, DePauw's was 35, Valparaiso's 27, Indiana University's 24, Butler's 15, Manchester's 11, Wabash's 10, Notre Dame's 8, State Teacher's 8, and Earlham's 3. (Fig. 3.)

As compared with universities and colleges in other states, five Indiana institutions rank among the nation's leading 100 in the number of college alumni sketched in "American Men of Science" 1944. Indiana University holds 20th place in the nation, Purdue 25th, DePauw 46th, Wabash 66th, Earlham 97th. This is despite the fact that five of the eight universities which rank highest in scientific alumni are situated close to Indiana and are relatively accessible to Indiana students. These five are the Universities of Michigan, Wisconsin, Illinois, Chicago and Ohio with the following numbers of collegiate alumni sketched in "American Men of Science" 1944: 849, 832, 786, 661, 640. Other relatively high ranking schools near Indiana, with the number of their living alumni recognized as scientists, are Michigan State 241, Oberlin 233, Northwestern 186, Cincinnati 133, Ohio Wesleyan 119, Miami 115, Western Reserve 81, Ohio U. 79, Denison 75, Wooster 75 and Case 75.

Specialties of Indiana Scientists

Chemistry has attracted far more Indiana scientists than any other field. About one-fourth of the scientists born in Indiana became chemists, as did slightly more than a fourth of the collegiate alumni; nearly half of those who received doctorates in science in Indiana majored in chemistry. About 30 per cent of the scientists in Indiana in 1943 were chemists.

Physics ranks second to chemistry as a scientific choice, with somewhat more than a third as many devotees. Next comes botany, followed by mathematics, zoology and geology. The numbers in each of these and various other sciences are given in Table I.

Table I reveals that for several sciences, Indiana schools trained more future specialists than were born in Indiana. This was true for botany, plant pathology, pharmacy, anatomy and civil and mechanical engineering. Conversely Indiana has sent to other states for their callege training more future specialists than have trained in Indiana in agronomy, geology, mathematics, entomology, plant physiology, forestry, pathology, medicine, astronomy and chemical engineering. Since considerable numbers of men have been trained in Indiana in these fields without later winning recognition as scientists, it appears that the training was less stimulating in these sciences than in some others.

Among the 334 doctorates received in Indiana by subsequently recognized scientists, there are, in addition to the 151 in chemistry already mentioned, 58 in physics, 19 in zoology, 15 in botany, 15 in geology, 14 in mathematics, 13 in psychology, 13 in pharmacy and 7 in physiology.

The percentages of the scientists sketched in "American Men of Science" 1944 who specialized in each of the more popular sciences has been calculated for four other states as well as for Indiana. Some comparisons are of interest. Indiana with 27 per cent who are chemists exceeds Iowa, Minnesota, Massachusetts and Kansas, where from 24 to 19 per cent are chemists. In physics also Indiana, with 9.7 per cent leads.

	Native	A.B. Alumni	Ph. D.	Other Final Degree	Tempor.	Now in Indiana
Chemistry	188	194	71	16	78	105
Phys. Chem.	34	31	22	1	11	22
Organic Chem.	52	54	50	3	15	41
Bio. Chem.	23	24	7	2	3	17
Physiol Chem.	12	8	1		3	4
Agric.	12	7		1	5	4
Agronomy	18	11	1		3	7
Animal Husb.	19	17	1	4	5	11
Physiology	28	27	7	1	3	11
Physics	119	117	58	13	43	55
Mathematics	74	66	14	8	40	54
Geology	52	32	15	4	10	16
Metallurgy	12	13	2	5	5	6
Psychology	57	57	13	2	18	33
Zoology	71	66	15	4	21	28
Entomology	18	13	2	1	9	14
Parasitology	6	5	2			4
Ecology	8	6	1		1	3
Biology	21	17	3	3	7	11
Botany	71	79	14	4	25	31
Plant. Physiol	20	11			4	5
Plant Path.	27	33	4	3	8	11
Horticulture	16	16	1	7	14	7
Forestry	6	3		1	3	3
Anatomy	18	20	1	2	4	7
Pharmacology	16	21	13	5	11	14
Pathology	11	3		1	5	6
Bacteriology	33	31	3	8	10	21
Medicine	32	16		10	3	10
Surgery	9	8		1		1
Med. Miscel.	19	15	1	3	3	5
Genetics	5	4	2		1	7
Soils	5	6	1	1	5	3
Nutrition	10	8		1	7	4
Astronomy	16	13	1	3	3	3
Geography	8	7	1		2	4
Eng. Misc.	29	32	1	14	16	19
Eng. Chem.	24	13	3	4	14	11
Civil	9	13		3	8	4
Elect.	16	15	1	11	7	7
Mech.	16	20	1	17	5	16
Miscellaneous	40	66	1	2	9	10
	1280	1218	334	172	445	655

TABLE 1 INDIANA SCIENTISTS CLASSIFIED BY SCIENCE AND OTHERWISE

	Industry	Colleges and Univs.	Governm't	Foundations and Museums	Private	Retired
Chemistry	205	164	39	4	9	4
Phys. Chem.	45	32	2			
Organic	89	49	7	2		
Bio. Chem.	17	26	6	1		
Physical Chem	6	9		1	2	
Agri.	3	14	2		1	
Agronomy		20	9			
Animal Husb.	5	31	3			
Physiology	1	41	1	1	1	
Physics	40	191	18	3	4	1
Mathematics	5	154	1	2	3	2
Geology	16	35	21	1	8	
Metallurgy	12	10	1	3	1	
Psychology	5	105	12		4	1
Zoology	2	108	10	4	5	1
Entomology	3	22	13		1	
Parasitology	1	5	3			
Ecology		9	3			
Biology	1	33	2		1	1
Botany	8	106	13	2	1	1
Plant, Physiol	3	20	4			
Plant Path.	4	34	12		1	1
Horticulture	2	27	8		1	1
Forestry		5	6			1
Anatomy		35				
Pharmacology	14	36	4			
Pathology	3	12	1	2	1	
Bacteriology	21	36	5	5	1	1
Medicine	4	26	5	1	5	3
Surgery		8	1		2	
Med. Miscel.	5	24	2			1
Genetics	1	13			1	
Soils	3	10	5			
Nutrition	3	13	2			
Astronomy		15	2	3	1	
Geography		13	1		2	
Eng. Misc.	20	40	10		7	1
Eng. Chem.	30	13	7	1	1	
Civil	1	21	3			
Elect.	13	22			2	1
Mech.	5	38				
Miscellaneous	4	41	9	1	5	1
	600	1669	254	37	71	22

TABLE 2 INDIANA SCIENTISTS CLASSIFIED BY EMPLOYMENT BY SCIENCES

Each of the other four states have about 6.4 per cent of their scientists in physics. Indiana also leads in botany (7.9), in which science Minnesota, Iowa and Kansas have about 6.5 per cent of their scientists botanists, and Massachusetts 5 per cent. In medicine, Indiana with 3.4 ranks close to Iowa and Kansas but far behind Massachusetts and Minnesota, each of which have 8 per cent of their scientists in medicine. Indiana also is behind in agriculture, zoology and geology. It is about average in engineering and slightly above average in mathematics and bacteriology.

Institutional Connections of Indiana Scientists

Of the 2,653 Indiana scientists here considered, 1,669 or 63.3 per cent were employed in 1943 by colleges and universities, 600 or 22.5 per cent were employed by industry, 254 or nearly 10 per cent worked for the government, 71 were privately employed, 37 were employed by foundations and museums, and 22 were retired. Of the 717 employed chemists, industry took 364, educational institutions 280, the government 54. Of the 256 employed physicists, colleges and universities took 191, industry 40, government 18. Only 5 of the 165 mathematicians were employed by industry in 1943, in contrast to 154 as teachers. Indeed, aside from chemists, physicists, engineers (68), bacteriologists (21), pharmacologists (14) and geologists (16), industry employed few of these scientists. Nevertheless, of the younger scientists, ever increasing percentage are employed by industry. (Table II.)

The 600 Indiana scientists employed by industry are connected with a total of 293 distinct firms of which 221 employed only one each, 32 employed 2 each, 13 employed 3, 7 employed 4, 4 employed 5, 5 employed 6, 6 employed 7-10. Only six firms outside of Indiana employed more than 6 Indiana scientists. These are Dupont 40, Standard Oil Research Co. 14, Dow Chemical 10, American Cyanamide 10, Montsanto 8, Abbott Laboratories 7; companies employing 6 are U. S. Rubber, R.C.A., Bell, Eastman, Alcoa. Only about one-tenth of Indiana's scientists are employed by one of the 13 large corporations which are especially conspicuous for their research activity (recently characterized by Secretary Henry A. Wallace as "dominating industrial research"). Why are not more Indiana scientists employed by these 13?

Age Distribution of Indiana Scientists

The median age of the Indiana scientists sketched in "American Men of Science" 1944 was 47 years in 1944. The oldest 29 were born before 1865, 316 or 12 per cent were 65 or older in 1944 and 7 per cent were 60-64. At the other extreme, 88 were born since 1914. Thus relatively few win the recognition of being sketched in "American Men of Science" before reaching 30. The Indiana botanists are older, on the average, than the chemists, mathematicians, physicists, bacteriologists, pharmocologists or geologists. Conspicuously young as groups are the organic chemists, physicists and geneticists.

Conclusion

Indiana has reared and trained relatively many recognized scientists, and has done conspicuously well with respect to some of the basic sciences. Although Indiana has done better in employing scientists than have many other states, more than half of the scientists reared or trained in Indiana are unable to find suitable employment in this state. This is especially true of the higher types of scientists, those starred by secret vote of their fellow scientists as especially distinguished. Of this distinguished group, Indiana employs less than one-fifth as many as were born here. (Sixty-one living in 1943 were born in Indiana, only eleven resident here, and of these eleven, five had retired.) Also regretable is the fact that in several of the sciences, Indiana lags badly behind other progressive states. Such a factual presentation as here presented will assist, it is hoped, to correct these conditions.

Starred Scientists Born or Trained in Indiana

By STEPHEN S. VISHER, Indiana University

Indiana was the state of birth of 81 starred scientists and the state in which 80 received their collegiate training. These Indiana scientists are about 3.6 percent of all the starred scientists who were born in the United States or received their college training here. They were starred in one or more of the seven editions of "American Men of Science" as especially distinguished in research. The voting was by secret ballot of the leaders in their science. Twenty-eight were starred in the first edition (1906), 11 to 13 in the second (1910), third (1921), and seventh (1944) editions, and 4, 5, or 8 in the other editions.

As part of an effort to learn more about what conditions are conducive to high achievement, the published data on the places of birth and of training of the starred scientists have been studied in considerable detail. In addition, a comprehensive questionnaire was sent in November, 1946, to those living, asking, among other questions, what influences they considered to have been most significant in their own case.

The present article is an abstract of some of the data on the scientists who were born in Indiana or who received their college degree there.

Yield in Proportion to Population

Indiana is exceeded in yield of starred scientists per million of population at their average date of birth by the New England States, the other East North Central States, by half of the West North Central States, and by New York, New Jersey, Delaware, Maryland and Wyoming. Indiana exceeds the remaining states, most of them by a wide margin. For example, Indiana's total yield per million of population is more than 10 times that of Arkansas, Mississippi, or Oklahoma and more than 5 times that of Alabama, Georgia, Louisiana or New Mexico. It was more than 3 times that of North Carolina, West Virginia, Kentucky, Tennessee, Florida or North Dakota. It was more than twice that of South Carolina, Virginia, Colorado, Montana, Utah or Oregon.

In the yield of *botanists*, Indiana was surpassed only by 8 states (Connecticut, Massachusetts, Vermont, New York, Illinois, Michigan, Wisconsin, and Nebraska). In the yield of *zoologists*, Indiana was surpassed by only 10 states (New England, except R. I., New York, Kansas, Minnesota, Maryland). In the yield of *psychologists*, Indiana was surpassed only by 8 states (New England, Utah and Wyoming). For *astronomers*, Indiana was surpassed by 12 states (New England, Ohio, Illinois, Michigan, Minnesota, Colorado and California). As to *anatomists*, Indiana was surpassed by 14 states; as to *anthropologists*, by 4 states; as to *chemists*, by 15 states; as to *geologists*, by 17 states;

as to *mathematicians*, by 16 states; as to *pathologists*, by 12 states; as to *physicists*, by 25 states; and as to *physiologists*, by 12 states. Thus Indiana's rank among the states was lowest as to physicists and relatively low as to geologists, chemists, mathematicians.

Table 1 gives the number of these scientists born in Indiana by decade of birth and by science. It reveals that half of the total were born in the 20 years 1860-1879, 30 were born since 1880, none since 1904. The yield of starred scientists per million of population was about 11 for the 1870's, 10 for the 1860's, 6 for the 1880's and somewhat more than 3 per million for the 1890's and 1900's. The causes for these changes in productivity are significant, and merit discussion.

Table 1 also shows that nearly one-fourth, 19, were starred in zoology, while 12 were starred in botany, 11 in chemistry and 6 or 7 each in geology, physics or psychology. Each of the 12 sciences in which starring has been done is represented by 2 or more Hoosiers. The relatively large numbers starred in zoology reflects the influence of David Starr Jordan. Several of the botanists were students of John Merle Coulter.

TABLE 1. Native Indiana Starred Scientists
Number born by science and decade of birth

Born	before 1860	1860's	1870's	1880's	1890's	1900's	1910's	Total
Anatomy	0	0	1	0	1	0	0	2
Anthropology	0	1	1	0	0	0	0	2
Astronomy	2	0	1	2	0	0	0	5
Botany	1	5	3	2	1	0	0	12
Chemistry	2	0	2	1	3	3	0	11
Geology	1	3	1	0	0	1	0	6
Mathematics	0	2	2	0	0	0	0	4
Pathology	1	1	0	1	0	1	0	4
Physics	1	2	0	0	2	2	0	7
Physiology	0	1	1	1	0	0	0	3
Psychology	0	3	1	1	1	0	0	6
Zoology	3	3	7	5	0	1	0	19
	—	—	—	—	—	—	—	—
Totals	11	21	20	13	8	8	0	81
Population Mid-Year Millions	1.2	1.5	1.8	2.1	2.35	2.6		
Yield per Million	9.1	10.0	11.0	6.2	3.4	3.1	0	

Areal Contrasts in Yield of Scientists

List 1 gives by science the names of the starred scientits born in Indiana, with the year and place of their birth, and list 7 presents the birth places by counties. When these birth places are mapped, it is seen that just half of the counties yielded no starred scientists, and a quarter of them yielded only one each. By contrast, Marion County yielded 5, Switzerland, Johnson and Wayne counties each 4, and Jefferson, Union, Hancock, Allen and Vigo 3 each. The yield by quarters of the State's population at the median date of the birth of these 81 scientists (1875) is as follows: the southeast quarter was the birthplace of 29 scientists, giving a yield of 14.5 per 100,000 of population. The northeast quarter yielded 23, or 11.5 per 100,000 population. The southwest yielded 19 or 9.5 per 100,000. The northwest yielded 11, or 5.5 per 100,000. Thus the southeast quarter did nearly three times as well as the equally populous northwest, and the northeast fully twice as well. The eastern half of the state's population yielded 63.5% of the total number, the southern half yielded 58.5%.

The unglaciated part of the State yielded 8 starred scientists, or at a rate of 4.8 per 100,000 of population. The relatively prosperous lower Wabash Valley Lowland of the southwestern part of the State, south of Terre Haute, yielded only one starred scientist. These 9 southwestern counties yielded starred scientists at the rate of one per 220,000 people. Fifteen northwestern counties having a combined population of 250,000 people yielded none. Two of these northwestern counties contain Wabash College and Purdue University. Why should 15 counties east and southeast of Marion County having a combined population of 284,000 people yield 30 starred scientists or one per 9,500 people while a similar number of counties in the northwest having as many people yielded none?

Theories as to Regional Contrasts in Yield

Seven theories as to the yield of notables are:

1. That leaders come from especially prosperous areas. This certainly is not true for all of Indiana. Crawford and Switzerland counties, two of the poorest in the State, yielded at the rate of 1 scientist per 4,200 people, while Benton, Howard, Rush, Blackford, Knox and many other rich counties with a combined population of much more than 200,000 people yielded not one starred scientist.

2. Another theory is that notable leaders come largely from areas which are educationally favored. In Indiana, for example, the counties containing Earlham and Franklin colleges and DePauw and Indiana universities yielded 10 starred scientists, one-eighth of the total number, although at the average date of birth of the scientists these counties contained only 95,000 people, or somewhat less than one-twentieth of the state's population. But on the other hand, 5 of the 6 counties which had the highest yield of starred scientists in proportion to population lacked colleges. These especially productive counties were Union,

Switzerland, Jefferson, Hancock, and Parke, with a total yield of 13 starred scientists from a population of 82,000 people, or an average of one scientist for 6,300 people. (Union and Switzerland counties did twice as well as this average). These 5 counties yielded starred scientists at about 50 percent higher rate than did the best 4 counties with colleges.

3. A third theory to explain the regional contrasts in yield of outstanding leaders is that they come from the culturally more advanced areas, not from frontiers. The Indiana data lends some support to this theory, as the southeastern part of the State was the first to be well-peopled, while the northwest was settled latest. However the inadequacy of this explanation is indicated by the fact that several parts of the state settled early yielded no starred scientist; an example is the southwestern part, Vincennes and Washington south to the Ohio River. Crawfordsville was another early cultural center which has yielded no starred scientists, although several have graduated from Wabash College. And Tippecanoe County, containing Purdue, has yielded none.

4. A fourth theory is that the distribution is erratic, a matter of chance. This theory is disproved by many data. The more the subject is studied, the more evidence is disclosed that "it is not mere chance."

5. A fifth theory is that wherever economic and cultural conditions are at least fairly favorable, the areal differences in yield of notables correlates with contrasts in the quality of segments of the population. In Indiana, a considerable number of the starred scientists were descendents of persons who left Germany in 1848 or soon thereafter, partly because they sought greater freedom from the oppression then imposed. Several other Indiana-born scientists were the children of Quakers or of Scotch Presbyterians who had come to Indiana from the Carolinas before the Civil War partly because they disapproved of slavery. The Quaker group, which settled largely fairly near Richmond (where they established Earlham College) yielded several of the starred scientists of Union, Wayne, and Randolph counties, and also the two from Parke County and the one from Orange County. The Scotch Presbyterians were less concentrated; they yielded several of the 81. Several other Indiana starred scientists had Puritan ancestors. Puritan "stock" has been especially productive of starred scientists, according to the returns from Cattell's 1904 and the present author's 1946 questionnaire, and to much other evidence. Most of the starred scientists born in northern Indiana had Puritan ancestors as did several of those born in southern Indiana.

6. A sixth theory is that outstanding leaders such as the starred scientists come from families that are especially alert, earnest, and ambitious, without respect to their racial backgrounds, and that such people tend to congregate in places of comparative opportunity for them to use their talents. Bits of evidence from the data as to the Indiana starred scientists which supports this theory include: When southeastern Indiana was relatively favored, it produced many leaders, but when, because of the depletion of soil and forest wealth and especially when greater opportunities opened elsewhere, many of the more ambitious

people moved away. As a result, southeastern Indiana has yielded few starred scientists for many years. For example none were born since 1880 in four of the southeastern counties which were especially productive earlier (Crawford, Jefferson, Switzerland or Union counties). Likewise not one was born since 1880 in the entire unglaciated part of the State. Indeed, all 42 counties south of Wayne, Johnson and Vigo have yielded only two since 1881, one born in 1887 (Mann), and the other in 1901 (Twitty). Another evidence of the selective migration of the parents of the starred scientists is that relatively many starred scientists were born in county seats, the local centers of greatest opportunity for talent. The considerable number born in college towns is another evidence. The fact that of the 30 born in Indiana since 1880, 12 were born in the Gas Belt of the late 1880's and 1890's is significant. The boom experienced there attracted relatively many ambitious people. Both of Indiana's Nobel Prize winners, Urey and Stanley, were born in the northern half of the State since 1892.

7. A seventh theory to explain the contrasts in yield of notables is that, from young people with the requisite ability, leaders come if they receive adequate encouragement from those close to them and from stimulating teachers, provided opportunities are afforded to them to develop their talents. Conversely, few become such leaders if sufficiently stimulating teachers are not available, and if they are not encouraged to prepare themselves adequately, and if opportunities to serve as leaders are not available. This theory has much support in Indiana.

Starred Scientists who Obtained College Degrees in Indiana

Of the 81 native starred scientists, 49 obtained their college degrees in Indiana and 31 graduated elsewhere, (one, Mooney, did not graduate). However, those who went elsewhere for their college training were matched by 31 who came from other states or countries to Indiana for their college degrees.

Table 2 shows by science and decade of graduation the number of starred scientists who received college degrees in Indiana. It reveals that 19 zoologists graduated in Indiana, 16 botanists, 13 chemists, 11 physicists, 8 psychologists, 7 astronomers, 2 each of anthropology, mathematics and physiology, 1 each of geology and pathology and none in anatomy. The available data indicate that of the 19 zoologists, 5 were students of David Starr Jordan and 8 studied under students of his who later taught in Indiana. In addition, several of Dr. Jordan's students were later starred in other sciences than zoology and gave him much credit for his having stimulated them to high achievement. Of the 16 botanists, about 5 were students of John Merle Coulter and 4 or 5 were students of his former students who later taught in Indiana. Of the 13 chemists, 4 graduated at DePauw, 2 of them under W. M. Blanchard; 3 graduated at Earlham and one each at Butler, Hanover, Manchester, Notre Dame, Purdue and Valparaiso. Of the 11 physicists, 4 graduated at DePauw, 3 at Indiana, and 2 each at Purdue and Rose

TABLE 2. Indiana colleges starred scientists collegiate alumni
Number by Science and Date of Graduation

	Before 1880	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920-1931
Anthropology	0	0	0	1	1	0	0	0	0	0
Astronomy	0	0	1	1	0	3	2	0	0	0
Botany	3	0	2	6	0	1	2	2	0	0
Chemistry	3	0	0	2	2	1	0	1	0	4
Geology	0	0	0	1	0	0	0	0	0	0
Mathematics	0	0	1	0	0	1	0	0	0	0
Pathology	0	0	1	0	0	0	0	0	0	0
Physics	0	1	0	5	1	1	1	0	0	2
Physiology	0	0	0	0	0	1	0	1	0	0
Psychology	0	1	0	2	0	1	2	1	1	0
Zoology	1	0	4	1	4	5	3	0	0	1
	—	—	—	—	—	—	—	—	—	—
	7	2	9	19	8	14	10	5	1	7

Polytechnic, none elsewhere. Of the 8 psychologists, Indiana graduated 5, Earlham, Evansville and Valparaiso 1 each (Stone graduated from both Valparaiso and Indiana University). Of the 7 astronomers, Indiana graduated 5, of whom 4 were students of the other one, John A. Miller. The remaining 2 were from Rose Poly and Valparaiso. The 2 anthropologists graduated at Earlham and I. U. The 2 mathematicians graduated at I. U. and Purdue; also graduated at I. U. were the 2 physiologists, the geologist, and the pathologist. (The names of these alumni are given in lists 2-5).

Table 2 shows that the number of subsequently starred scientists who obtained their college degree in Indiana fluctuated among the half decades. During 1890-1894, 19 graduated, during the next half-decade 8, but during 1900-1904, 14. Conversely, only 1 graduated 1915-1919, although 7 graduated since 1919. Why not? What happened at Indiana University, for example, which caused it to graduate 5 in 1902 and 8 in 1903-1906 but only two since then? Of 266 men who graduated there in the 1880's, 5 were starred; of the 833 who graduated in the 1890's, 11 were starred; of the approximately 800 who graduated 1900-1906, 14 were starred. For 1907-1929 inclusive about 8000 men were graduated from I. U. Of these only 2 were starred. Thus nearly 2 percent of the graduates of the 1880's later were starred, 1.3 percent of the graduates of the 1890's, 1.6% of those of 1900-1906, less than 0.1% of those of the next decade and none at all since then!

The fluctuation in the proportion of the alumni who subsequently were starred correlates with several conditions, including changes in the faculty, changes in institutional policies, changes in size of enrollments and classes, changes in opportunities, changes in the age of the faculty. The large number of graduates of 1902-1906 who became distinguished scientists clearly merits special consideration. Apparently the coming of W. L. Bryan to the presidency in 1902 and the establishment of the Graduate School aroused hopes and greatly stimulated various students. Why the drastic decline after 1906? Apparently this was partly due to failure of the expectations aroused in 1902 to materialize. Significant also was the sharp increase in enrollments which occurred then, and the relatively great growth of the law school and medical school. Moreover since about 1907 many of the students taking zoology have done so because it is one of the requirements for admission to medical school, not because they were especially interested in zoology. Such students tend to divert students who had planned on becoming scientists. Other factors influencing the decline were the relatively notable advancement in certain other universities, and the greater opportunities in business. (Gary was founded in 1906 and industrialization developed rapidly in Indiana following 1906.) The progressive aging of the faculty also played a part. In 1902, most of the faculty were relatively young. Many of them continued in power, as heads of their departments, for some decades. When President Bryan retired in 1937, at the age of 77, many of the department heads and deans were elderly and, as is true of most elderly persons, no longer optimistic and enthusiastic.

List 2 gives by science and institution the names of the collegiate alumni, with the year of their graduation. (Stone received two bachelors degrees. Pike is listed under both zoology and physiology.)

As a sort of appendix are given 6 lists. List 3 gives by schools their starred alumni; List 4 and 5 give these by year of graduation, with some summary data. List 6 gives, alphabetically, the names of the 81 starred scientists born in Indiana. List 7 gives them by counties. List 8 gives those 31 born elsewhere who received college degrees in Indiana. At the end there is a summary and some conclusions.

LIST 1. INDIANA STARRED SCIENTISTS, BIRTHPLACES BY SCIENCE

With Year of Birth Given After the Name

Anatomy: (2) A Kuntz '79 (Batesville, Ripley Co.,); W. F. Windle '98 (Huntington, Huntington Co.).

Anthropology: (2) J. Mooney '61 (Richmond, Wayne Co.); C. Wissler '70 (Wayne Co.).

Astronomy: (5) C. L. Doolittle '43 (Ontario, Lagrange Co.); J. C. Duncan '82 (Knightstown, Hancock Co.); J. A. Miller '59 (Greensburg, Decatur Co.); Slipher, E.C. '83 & V.M. '75 (Mulberry, Clinton Co.).

Botany: (12) C. R. Barnes '58 (Madison, Jefferson Co.); H. L. Bolley '65 (Holman, Dearborn Co.); O. W. Caldwell '69 (Lebanon, Boone Co.); H. M. Fitzpatrick '86 (Greenwood, Johnson Co.); R. B. Harvey '90 (Monroeville, Morgan Co.); D. T. MacDougal '65 (Liberty, Union Co.); G. T. Moore '71 (Indianapolis, Marion Co.); D. M. Mottier '64 (Patriot, Switzerland Co.); E. W. Olive '70 (Lebanon, Boone Co.); J. N. Rose '62 (Union Co.); J. R. Schramm '85 (Hancock Co.); H. H. Whetzel '77 (near Avilla, Noble Co.).

Chemistry: (11) R. F. Bacon '80 (Muncie, Delaware Co.); G. L. Clark '92 (Anderson, Madison Co.); A. C. Cope '09 (Dunreith, Henry Co.); M. R. Fenske '04 (Michigan City, LaPorte Co.); C. A. Kraus '75 (Knightsville, Clay Co.); S. A. Lattimore '28 (Liberty, Union Co.); H. N. McCoy '70 (Richmond, Wayne Co.); W. A. Noyes, Jr. '98 (Terre Haute, Vigo Co.); L. I. Smith '91 (Indianapolis, Marion Co.); W. M. Stanley '04 (Ridgeville, Randolph Co.); H. W. Wiley '44 (Kent, Jefferson Co.)

Geology: (6) H. F. Bain '71 (Seymour, Jackson Co.); C. P. Berkey '69 (Goshen, Elkhart Co.); O. P. Hay '46 (Jefferson Co.); E. M. Kindle '69 (Franklin, Johnson Co.); P. B. King '03 (Richmond, Wayne Co.); F. B. Taylor '60 (Ft. Wayne, Allen Co.).

Mathematics: (4) O. E. Glenn '78 (Moorefield, Switzerland Co.); E. R. Hedrick '76 (Union City, Randolph Co.); D. N. Lehmer '67 (Somerset, Wabash Co.); J. B. Shaw '66 (Remington, Jasper Co.).

Pathology: (4) J. S. Billings '38 (Switzerland Co.); G. F. Dick '81 (Fort Wayne, Allen Co.); T. Francis, Jr. '00 (Gas City, Grant Co.); A. S. Warthin '66 (Greensburg, Decatur Co.).

Physics: (7) L. A. DuBridge '01 (Terre Haute, Vigo Co.); A. L. Foley '67 (Hancock Co.); W. H. Furry '07 (Prairietown, Vigo Co.); E. Merritt '65 (Indianapolis, Marion Co.); W. B. Nottingham '99 (Tipton, Tipton Co.); J. O. Reed '56 (Newcastle, Henry Co.); H. C. Urey '93 (Walkerton, St. Joseph Co.).

Physiology: (3) R. Burton-Opitz '75 (Ft. Wayne, Allen Co.); C. W. Greene '66 (Crawford Co.); F. C. Mann '87 (Decatur, Adams Co.).

Psychology: (7) G. W. Allport '97 (Montezuma, Parke Co.); W. L. Bryan '60 (Bloomington, Monroe Co.); J. F. Dashiell '88 (Southport, Marion Co.); E. H. Lindley '69 (Paoli, Orange Co.); E. D. Starbuck '66 (Bridgeport, Marion Co.); C. P. Stone '92 (Portland, Jay Co.); L. M. Terman '77 (Johnson Co.).

Zoology: (19) W. C. Allee '85 (Bloomingdale, Parke Co.); B. M. Allen '77 (Greencastle, Putnam Co.); A. M. Banta '77 (Greenwood, Johnson Co.); G. N. Calkins '69 (Valparaiso, Porter Co.); C. Grave '70 (Monrovia, Morgan Co.); C. W. Hargitt '52 (Lawrenceburg, Dearborn Co.); G. T. Hargitt '81 (Fairfield, Franklin Co.); O. P. Hay '46 (Jefferson Co.); H. Heath '68 (Vevay, Switzerland Co.); W. T. Hornaday '54 (Plainfield, Hendricks Co.); C. Juday '71 (Ligonier, Noble Co.); C. H. Kennedy '79 (Rockport, Spencer Co.); W. L. McAtee '83 (Jalapa, Grant Co.); N. E. McIndoo '81 (Lyons, Greene Co.); W. J. Moenkhaus '71 (Huntingburg, DuBois Co.); F. Payne '81 (Shelbyville, Shelby Co.); J. Reighard '61 (LaPorte Co.); O. Riddle '77 (Crawford Co.); V. C. Twitty '01 (Martin Co.).

LIST 2. STARRED COLLEGIATE ALUMNI OF INDIANA BY SCIENCE

Anthropology: *Earlham:* Goddard, P. E. '92; *Indiana:* Wissler, C. '97.

Astronomy: *Indiana:* Duncan, J. C. '05; Lampland, C. O. '02; Miller, J. A. '90; Slipher, E. C. '06; Slipher, V. M. '01. *Rose Polytechnic Inst.:* Parkhurst, J. A. '86; *Valparaiso:* Anderson, J. A. '00.

Botany: *DePauw:* MacDougal, D. T. '90; *Earlham:* Petry, L. D. '07; *Franklin:* Caldwell, O. W. '94; *Hanover:* Barnes, C. R. '77; Coulter, J. M. '70; Coulter, S. '77 *Indiana:* Bray, W. L. '93; Mottier, D. M. '91; *Purdue:* Bolley, H. L. '88; *Valparaiso:* LaRue, C. D. '10; *Wabash:* Moore, G. T. '94; Olive, E. W. '93; Reddick, D. '05; Rose, J. N. '85; Schramm, J. R. '10; Whetzel, H. H. '02.

Chemistry: *Butler:* Cope, A. C. '29; *DePauw:* Bacon, R. F. '99; Clark, G. L. '14; Fenske, M. R. '25; Lattimore, S. A. '50; *Earlham:* Howe, H. E. '01; Stanley, W. M. '26; Warder, R. B. '66; *Hanover:*

Wiley, H. W. '67; *Manchester:* Flory, P. J. '31; *Notre Dame:* Nieuwland, J. A. '99; *Purdue:* McCoy, H. N. '92; *Valparaiso:* Teeple, J. E. '93.

Geology: *Indiana:* Kindle, E. M. '93.

Mathematics: *Indiana:* Glenn, O. E. '02; *Purdue:* Shaw, J. B. '89.

Pathology: *Indiana:* Warthin, A. S. '88.

Physics: *DePauw:* Furry, W. H. '28; Longden, A. C. '81; Stewart, G. W. '98; Stewart, O. M. '92; *Indiana:* Brown, F. C. '04 Foley, A. L. '90; Knipp, C. T. '94; *Purdue:* Luckiesh, M. '09; Nottingham, W. B. '20; *Rose Polytech. Inst.:* Johonnott, E. S. '93; Mendenhall, C. E. '94.

Physiology: *Indiana:* Mann, F. C. '11; Pike, F. H. '03.

Psychology: *Earlham:* Mills, W. R. '08; *Evansville:* Dashiell, J. F. '08; *Indiana:* Bryan, Wm. L. '84; Lindley, E. H. '93; Starbuck, E. D. '90; Stone, C. P. '15; Terman, L. M. '02; *Valparaiso:* Stone, C. P. '10.

Zoology: *Butler:* Gilbert, C. H. '79; Twitty, V. C. '25; *DePauw:* Allen, B. M. '98; McFarland, F. M. '89; Riley, W. A. '97; *Earlham:* Allee, W. C. '08; Grave, C. '95; *Indiana:* Banta, A. M. '03; Edwards, C. L. '86; Eigenmann, C. H. '86; Evermann, B. W. '86; Juday, C. '96; Kennedy, C. H. '02; McAtee, W. L. '04 McIndoo, N. E. '06; Moenkhaus, W. J. '94; Payne, F. '05; Pike, F. H. '03; Riddle, O. '02.

LIST 3. STARRED COLLEGIATE ALUMNI OF INDIANA SCHOOLS

Butler: (3) *Chemistry:* Cope, A. C. '29 *7; *Zoology:* Gilbert, C. H. '79 *1; Twitty, V. C. '25 *6.

DePauw: (12) *Botany:* MacDougal, D. T. '90 *1; *Chemistry:* Bacon, R. F. '99 *3; Clark, G. L. '14 *5; Fenske, M. R. '25 *7; Lattimore, S. A. '50 *1; *Physics:* Furry, W. H. '28 *7; Longden, A. C. '81 *1; Stewart, G. W. '98 *1; Stewart, O. M. '92 *1; *Zoology:* Allen, B. M. '98 *2; McFarland, F. M. '89 *1; Riley, W. A. '97 *5.

Earlham: (8) *Anthropology:* Goddard, P. E. '92 *3; *Botany:* Petry, L. D. '07 *6; *Chemistry:* Howe, H. E. '01 *3; Stanley, W. M. '26 *7; Warder, R. B. '66 *1; *Psychology:* Miles, W. R. '08 *4; *Zoology:* Allee, W. C. '08 *3; Grave, C. '95 *1.

Evansville: (1) *Psychology:* Dashiel, J. F. '08 *5.

Franklin: (1) *Botany:* Caldwell, O. W. '94 *2.

Hanover: (4) *Botany:* Barnes, C. R. '77 *1; Coulter, J. M. '70 *1; Coulter, S. '77 *1; *Chemistry:* Wiley, H. W. '67 *1.

Indiana: (32) *Anthropology:* Wissler, C. '97 *1; *Astronomy:* Duncan, J. C. '05 *6; Lampland, C. O. '02 *3; Miller, J. A. '90 *3; Slipher, E. C. '06 *5; Slipher, V. M. '01 *3; *Botany:* Bray, W. L. '93 *1; Mottier, D. M. '91 *1; *Geology:* Kindle, E. M. '93 *3; *Mathematics:*

Glenn, O. E. '02 *3; *Pathology:* Warthin, A. S. '88 *1; *Physics:* Brown, F. C. '04 *3; Foley, A. L. '90 *1; Knipp, C. T. '94 *1; *Physiology:* Mann, F. C. '11 *4; Pike, F. H. '03 *3; *Psychology:* Bryan, Wm. L. '84 *1; Lindley, E. H. '93 *1; Starbuck, E. D. '90 *2; Stone, C. P. '15 *5; Terman, L. M. '02 *3; *Zoology:* Banta, A. M. '03 *3; Edwards, C. L. '86 *1; Eigenmann, C. H. '86 *1; Evermann, B. W. '86 *2; Juday, C. '96 *4; Kennedy, C. H. '02 *7; McAtee, W. L. '04 *6; McIndoo, N. E. '06 *7; Moenkhaus, W. J. '94 *2; Payne, F. '05 *3; Pike, F. H. '03 *3; Riddle, '02 *3.

Manchester: (1) *Chemistry:* Flory, P. J. '31 *7.

Notre Dame: (1) *Chemistry:* Nieuwland, J. A. '99 *5.

Purdue: (5) *Botany:* Bolley, H. L. '88 *1; *Chemistry:* McCoy, H. N. '92 *2; *Mathematics:* Shaw, J. B. '89 *1; *Physics:* Luckiesh, M. '09 *3; Nottingham, W. B. '20 *7.

Rose Polytechnic Institute: (3) *Astronomy:* Parkhurst, J. A. '86 *2; *Physics:* Johonnott, E. S. '93 *2; Mendenhall, C. E. '94 *1.

Valparaiso: (4) *Astronomy:* Anderson, J. A. '00 *3; *Botany:* LaRue, C. D. '10 *6; *Chemistry:* Teeple, J. E. '93 *4; *Psychology:* Stone, C. P. '10 *5.

Wabash: (6) *Botany:* Moore, G. T. '94 *1; Olive, E. W. '93 *2; Reddick, D. '05 *3; Rose, J. N. '85 *1; Schramm, J. R. '10 *3; Whetzel, H. H. '02 *3.

LIST 4. STARRED COLLEGIATE ALUMNI
By School and Year of Graduation

Butler: (3) 1879 Gilbert; 1925 Twitty; 1929 Cope.

Depauw: (12) 1850 Lattimore; 1881 Longden; 1889 McFarland; 1890 MacDougal; 1892 Stewart, O. M.; 1897 Riley; 1898 Allen; Stewart, G. W.; 1899 Bacon; 1914 Clark; 1925 Fenske; 1928 Furry.

Earlham: (8) 1866 Warder; 1892 Goddard; 1895 Grave; 1901 Howe; 1907 Petry; 1908 Allee; Miles; 1926 Stanley.

Evansville: (1) 1908 Dashiell.

Franklin: (1) 1894 Caldwell.

Hanover: (4) 1867 Wiley; 1870 Coulter, J. M.; 1877 Barnes; Coulter, S.

Indiana: (32) 1884 Bryan; 1886 Edwards; Eigenmann; Evermann; 1888 Warthin; 1890 Foley; Miller; Starbuck; 1891 Mottier; 1893 Bray; Kindle; Lindley; 1894 Knipp; Moenkhaus; 1896 Juday; 1897 Wissler; 1901 Slipher, V. M.; 1902 Glenn; Kennedy; Lampland; Riddle; Terman; 1903 Banta; Pike; 1904 Brown; McAtee; 1905 Duncan; Payne; 1906 McIndoo; Slipher, E. C.; 1911 Mann; 1915 Stone.

Manchester: (1) 1931 Flory.

Notre Dame: (1) 1899 Nieuwland.

Purdue: (5) 1888 Bolley; 1889 Shaw; 1892 McCoy; 1909 Luckiesh; 1920 Nottingham.

Rose Polytechnic Institute: (3) 1886 Parkhurst; 1893 Johnnott; 1894 Mendenhall.

Valparaiso: (4) 1893 Teeple; 1900 Anderson; 1910 LaRue; Stone.

Wabash (6) 1885 Rose; 1893 Olive; 1894 Moore; 1902 Whetzel; 1905 Reddick; 1910 Schramm.

LIST 5. STARRED COLLEGIATE ALUMNI OF INDIANA BY CLASS

1850 Lattimore, S. A. 1866 Warder, R. B. 1867 Wiley, H. W. 1870 Coulter, J. M. 1877 Barnes, C. R.; Coulter, S. 1879 Gilbert, C. H. 1881 Longden, A. C. 1884 Bryan, Wm. L. 1885 Rose, J. N.; 1886 Edwards, C. L.; Eigenmann, C. H.; Evermann, B. W.; Parkhurst, J. A. 1888 Bolley, H. L.; Warthin, A. S. 1889 McFarland, F. M.; Shaw, J. B. 1890 Foley, A. L.; MacDougal, D. T.; Miller, J. A. Starbuck, E. D. 1891 Mottier, D. M. 1892 Goddard, P. E.; McCoy, H. N.; Stewart, O. M. 1893 Bray, W. L.; Johonnott, E. S.; Kindle, E. M.; Lindley, E. H.; Olive, E. W.; Teeple, J. E. 1894 Caldwell, O. W.; Knipp, C. T.; Mendenhall, C. E.; Moenkhaus, W. J.; Moore, G. T. 1895 Grave, C. 1896 Juday, C. 1897 Riley, W. A.; Wissler, C. 1898 Allen, B. M.; Stewart, G. W.

1899 Bacon, R. F.; Nieuwland, J. A. 1900 Anderson, J. A. 1901 Howe, H. E.; Slipher, V. M. 1902 Glenn, O. E.; Kennedy, C. H.; Lampland, C. O.; Riddle, O.; Terman, L. M.; Whetzel, H. H. 1903 Banta, A. M.; Pike, F. H. 1904 Brown, F. C.; McAtee, W. L. 1905 Duncan, J. C.; Payne, F.; Reddick, D. 1906 McIndoo, N. E.; Slipher, E. C. 1907 Petry, L. D. 1908 Allee, W. C.; Dashiell, J. F.; Miles, W. R. 1909 Luckiesh, M. 1910 LaRue, C. D.; Schramm, J. R.; Stone, C. P. 1911 Mann, F. C. 1914 Clark, G. L. 1915 Stone, C. P. 1920 Nottingham, W. B. 1925 Fenske, M. R.: Twitty, V. C. 1926 Stanley, W. M. 1928 Furry, W. H. 1929 Cope, A. C. 1931 Flory, P. J.

Before 1870 3; 1870's 4; 1880-84 2; 1885-89 9; 1890-94 19; 1895-99 8; 1900-04 12; 1905-09 10; 1910-14 5; 1915-19 0; 1920-24 1; 1925-29 4; 1930-1.

Every year 1884-1914 had 1 to 6.

Since 1914 only 7 have graduated, 6 of them 1915-1931.

The high years were 1893 and 1902, 6 each; 1894 5, in 1886 and 1890 4, and 3 each in 1905, 1908, 1910.

LIST 6. STARRED SCIENTISTS BORN IN INDIANA

Arranged Alphabetically; Year of Birth

Allee, W. C. '85; Allen, B. M. '77; Allport, G. W. '97; Bacon, R. F. '80; Bain, H. F. '71; Banta, A. M. '77; Barnes, C. R. '58; Berkey, C. P. '67;

Billings, J. S. '38; Bolley, H. L. '65; Bryan, W. L. '60; Burton-Opitz, R. '75; Caldwell, O. W. '69; Calkins, G. N. '69; Clark, G. L. '92; Cope, A. C. 1909; Dashiell, J. F. '88; Dick, G. F. '81; Doolittle, C. L. '43; DuBridge, L. A. 1901; Duncan, J. C. '82; Fenske, M. R. 1904; Fitzpatrick, H. M. '86; Foley, A. L. '67; Francis, T., Jr. 1900; Furry, W. H. 1907; Glenn, O. E. '78; Grave, C. '70; Greene, C. W. '66; Hargitt, C. W. '52; Hargitt, G. T. '81; Harvey, R. B. '90; Hay, O. P. '46; Heath, H. '68; Hedrick, E. R. '76; Hornaday, W. T. '54.

Juday, C. '71; Kennedy, C. H. '79; Kindle, E. M. '69; King, P. B. 1903; Kraus, C. A. '75 Kuntz, A. '79; Lattimore, S. A. '28; Lehmer, D. N. '67; Lindley, E. H. '69; MacDougal, D. T. '65; Mann, F. C. '87; McAtee, W. L. '83; McCoy, H. N. '70; McIndoo, N. E. '81; Merritt, E. '65; Miller, J. A. '59; Moenkhaus, W. J. '71; Mooney, J. '61; Moore, G. T. '71; Mottier, D. M. '64; Nottingham, W. B. '99; Noyes, W. A., Jr. '98; Olive, E. W. '70; Payne, F. '81; Reed, J. O. '56; Reighard, J. '61; Riddle, O. '77; Rose, J. N. '62 Schramm, J. R. '85; Shaw, J. B. '66; Slipher, E. C. '83; Slipher, V. M. '75; Smith, L. I. '91; Stanley, W. M. 1904; Starbuck, E. D. '66 Stone, C. P. '92; Taylor, F. B. '60; Terman, L. M. '77; Twitty, V. C. 1901; Urey, H. C. '93; Warthin, A. S. '66; Whetzel, H. H. '77; Wiley, H. W. '44 Windle, W. F. '98; Wissler, C. '70.

List 7. Starred Scientists Born in Indiana

Arranged by Counties

Adams: Mann; *Allen:* Burton-Opitz, Dick, Taylor; *Boone:* Caldwell, Olive; *Clay:* Kraus; *Clinton:* Slipher, E. C. and V. M.; *Crawford:* Greene, Riddle; *Dearborn:* Bolley, Hargitt, C. W.; *Decatur:* Miller, Warthin; *Delaware:* Bacon; *Dubois:* Moenkhaus; *Elkhart:* Berkey; *Franklin:* Hargitt, G. T.; *Grant:* Francis, McAtee; *Greene:* McIndoo; *Hancock:* Duncan, Foley, Schramm; *Hendricks:* Hornaday; *Henry:* Cope, Reed; *Huntington:* Windle; *Jackson:* Bain; *Jasper:* Shaw; *Jay:* Stone; *Jefferson:* Barnes, Hay, Wiley; *Johnson:* Banta, Fitzpatrick, Kindle, Terman; *LaGrange;* Doolittle; *LaPorte;* Fenske, Reighard; *Madison:* Clark; *Marion:* Dashiell, Merritt, Moore, Smith, Starbuck; *Martin:* Twitty; *Monroe:* Bryan; *Morgan:* Grave, Harvey; *Noble:* Juday, Whetzel; *Orange:* Lindley; *Parke:* Allee, Allport; *Porter:* Calkins; *Putnam:* Allen; *Randolph:* Hedrich, Stanley; *Ripley:* Kuntz; *St. Joseph:* Urey; *Shelby:* Payne; *Spencer:* Kennedy; *Switzerland:* Billings, Glenn, Heath, Mottier;*Tipton:* Nottingham; *Union:* Lattimore, MacDougal, Rose; *Vigo:* DuBridge, Furry, Noyes; *Wabash:* Lehmer; *Wayne:* King, McCoy, Mooney, Wissler.

List 8. Starred Scientists Who Came to Indiana for Their College Degrees

Anderson, J. A.; Bray, W. L.; Brown, F. C.; Coulter, J. M.; Coulter, Stanley; Edwards, C. L.; Eigenmann, C. H.; Everman, B. W.; Flory, P. J.; Gilbert, G. H.; Goddard, P. E.; Johonnott, E. S.; Howe, H. E.; Knipp, C. T.; Lampland, C. O.; LaRue, C. D.; Longden, A. C.; Luckiesh, M.; McFarland, F. M.; Mendenhall, C. E.; Miles, W. R.; Nieuwland, J. A.; Parkhurst, J. A.; Petry, L. D.; Pike, F. H.; Reddick, D.; Riley, W. A.; Stewart, G. W.; Stewart, O. M.; Teeple, J. E.; Warder, R. B.

Summary and Conclusions

Indiana was the native state of 81 scientists starred in the biographical directory, "American Men of Science," (by secret vote of their fellow scientists) as especially distinguished in research. Each of the 12 sciences in which starring has been done have had 2 or more representatives born in Indiana; zoology had 19, botany 12, chemistry 11, physics 7, geology 6, psychology 6, astronomy 5, mathematics and pathology 4 each, physiology 3, and anatomy and anthropology 2 each, For 7 sciences, Indiana surpassed more than three-fourths of the 48 states in the yield of starred scientists per million of population at about the date of their birth. For 3 sciences (anatomy, chemistry and mathematics) it surpassed two-thirds of the states and it stood only a little lower for geology. Only for physics was it surpassed by slightly more than half of the states.

The birthplaces of these scientists are very unequally distributed over the state. In brief, of those born before 1880, the southeastern part of the state led by a wide margin, but of those born since 1880 the southern part of the state yielded few. Contrasts among the counties and sections of the state are presented in some detail, and several possible explanations of the contrasts are offered.

Indiana institutions conferred college degrees upon 81 subsequently starred scientists, 31 of whom were born elsewhere. By institutions Indiana University graduated 32, DePauw 12, Earlham 8, Wasbash 6, Purdue 5, Hanover and Valparaiso 4, Butler and Rose 3, and Evansville, Franklin, Manchester, and Notre Dame 1 each. Considerable evidence, summarized in the paper, indicates that personal encouragement by enthusiastic, stimulating teachers was an important influence in the output of subsequently starred scientists. For example, 13 of the 19 zoologists were students of David Starr Jordan or of men started by him. In addition, several of Dr. Jordan's students were starred in other sciences. Of the 16 botanists, about 10 were students of John Merle Coulter or of students of his. John A. Miller trained most of the astronomers. W. M. Blanchard trained 2 of the chemists. Conversely, despite very large enrollments in chemistry for many decades, only one Purdue alumnus has been starred in chemistry and none from Indiana University. This suggests that large classes, sort of mass production methods, are not conducive to stimulating young people to become scholars. What is needed in addition to able students is individual attention and personal encouragement.

Men of Science in Indiana Past and Present

JOHN S. WRIGHT, Indianapolis

The history of Science in Indiana may be said to have begun about 150 years ago with the advent of General George Rogers Clark, who came to this territory first in 1778 and who was a resident of the present area of the state much of the time thereafter until his death in 1818.

Clark was a neighbor and a boyhod friend of Thomas Jefferson from whom he probably acquired his interest in science. Throughout his life as opportunity offered he was in communication with Jefferson and on one occasion sent him specimens of mammoth bones from the Ohio Valley.

Clark's powerful, active mind and training as a frontiersman and soldier made him an acute observer, constantly studying the Indians and the features of the country over which he fought. The Indian mounds engaged his attention. He discussed them with intelligent Indians and left among his records a paper on their origin, sharply at variance with the opinions then held by archeologists. Clark's conclusions have since proven to be substantially in accord with the deductions of those who later made studies of the excavations.

In his biography of Clark ("Clark of the Ohio"), Frederick Palmer says, Audubon, who came to Louisville in 1807, visited Clark, who on acquaintance said Audubon was a man after his own heart; that he was not like some of the "American Museum fellows," speculating on second-hand information (a reference to their theories of the origin of the mounds), but going out and seeing the life of the forests for himself. Audubon's notes of his visits with Clark were lost. Clark made none.

In 1803 before starting on the celebrated Lewis and Clark expedition, William Clark called on his famous brother, the General, at Clarksville, Indiana, from whom it is believed that he received priceless advice on the conduct of the expedition. General Clark was keenly interested in the Indians and in the scientific results of the exploration, and must have been delighted with the account William brought him when he made his last visit on the return of the expedition in 1806.

Although Clark published nothing on scientific subjects there was at least one paper on archeology in his records, referred to above. General Clark manifested repeatedly the proper spirit of the investigator, appreciation of scientific work and of true scientists. It is probably quite within bounds to claim him as the first man of science or of known scientific interests in Indiana.

The New Harmony period of science in Indiana runs from about 1825 to approximately 1860. During this time some of the most distinguished of American and a few celebrated European scientists visited New Harmony. Certain eminent scientists were resident in the community and did important work there. For example, David Dale

Owen made New Harmony his home and the seat from which he directed government geological surveys of sections of Iowa, Illinois, Minnesota, Nebraska, and Wisconsin during much of the period between 1837 and 1852. Considerable has been written of the New Harmony group so that it should not be difficult to assemble the facts essential to the history of this period of science in the state.

Probably the details of the story of science in the state for the first ten or twenty years following the beginning of the Civil War will require considerable searching of the records in the archives of the various colleges and universities of Indiana.

Once it becomes known that a responsible group in the Academy is endeavoring to prepare a history of science in the state it may be found that individuals interested in special fields of science have collected data on men and work in their respective fields and that they will be willing to contribute from their collections.

In 1885 Indiana was the home of a group of brilliant and purposeful scientists, some of whom were leaders of national standing in their respective fields; among them were Jordan, the Coulters, Mendenhall, Noyes, Campbell, Butler, and Branner. When these men organized the Academy their sponsorship gave it immediate standing and the Indiana Academy of Science has been one of the most successful of all similar state institutions. Until a high degree of specialization was reached, resulting in the organization of state branches of certain groups, for example the Indiana branch of the American Chemical Society, the Academy of Science membership included nearly all residents of the state engaged in scientific work. Its publications are a fairly complete index to the scientific interests and accomplishments in Indiana for a period of approximately 25 years.

Records of the special scientific societies supplementing the Academy's own proceedings will contain the majority of the material needed to write the story of the various fields of research in the state since 1885.

A comprehensive account of science in Indiana will include some of the activities of the state Audubon society, the engineering societies, research departments of technical industries, the public health service, the state departments having to do with conservation and the medical group.

In contemplating the undertaking, which happily has begun under a committee headed by Dr. Edington, it appears that the final committee should include a representative of each department of science, and one who has been in the state long enough to know something of the traditions of our higher educational institutions and of the Academy of Science.

The committeeman on geology, for example, could enlist the aid of someone in each college to search the records and report on all men connected with that institution, both past and present, who as geologists deserve a place in the record. Committeemen representing astronomy, botany, chemistry, engineering, mathematics, medicine, physics, zoology, etc., etc., could do the same with respect to their departments.

The Biographical Section

The most useful and prized section of a volume on *Men of Science in Indiana Past and Present* will be the biographical dictionary or Who's Who. The story of science in the state as suggested above although quite important, would be to an extent prefatory, as the interest probably will center on the biographies.

The relationship of the man to the State in respect to his scientific career should be so clear that the authors and the sponsors of the biographies will not be open to the charge of claiming too much for Indiana science. An examination of a few biographies makes it apparent that there are seven or more degrees of connection between Indiana and men of science. These range from that of the native sons educated and residing in the state throughout their careers to that of men born and educated elsewhere but resident in the state for a short time only; men whose major work was done elsewhere. The following are examples of degrees of relationship:

Men of Science in Indiana Past and Present

1. *Native*—Education and career in the state.
   Examples—Amos W. Butler, Charles C. Deam, A. L. Foley.
2. *Native*—Educated in Indiana, career chiefly elsewhere.
   Examples—Harvey W. Wiley, Henry L. Bolley, the Cory brothers, H. T. and C. L., W. C. Allee.
3. *Native*—Higher education and career elsewhere.
   Examples—John S. Billings, M.D., George Brown Goode, George A. Reisner, Clarence A. Mills, M.D.

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4. *Not Native*—Educated and worked in Indiana.
   Examples—John M. and Stanley Coulter, Julius A. Nieuwland, Willis S. Blatchley.
5. *Not Native*—Educated in Indiana but worked elsewhere.
   Examples—None occur to me now but doubtless the the alumni rolls of many Indiana colleges contain the names of such.
6. *Not Native*—Educated elsewhere but worked in Indiana.
   Examples—Gen. George Rogers Clark, David S. Jordan, T. C. Mendenhall, Thomas Gray, J. C. Arthur, and hosts of others.
7. *Not Native*—Educated and worked in science elsewhere but had brief residence in the State, or made visits in pursuit of scientific work.
   Examples—Constantine S. Raffinesque, John J. Audubon, others temporarily associated with the New Harmony group, Heinrich Schliemann, whose residence in Indianapolis for one year to obtain a divorce was of doubtful credit to the State.

With a list of names for consideration, questionnaires could be prepared and submitted for the information needed to prepare terse biographies. The American Men of Science style of biography is tentatively suggested as a model, to which might be added a brief bibliography of the more important papers and a statement of outstanding work of the individual, especially that done in Indiana.

Living subjects could be asked to submit their own biographies on a form provided. Obviously all such autobiographies would have to be subjected to careful editing to attain uniformity of style.

If each biography contained a terse statement of the ancestral stock of the subject, indicated the occupation of father, necessity and extent of self-support in college, valuable data would be afforded for statistical studies. It might not be expedient to publish all such data, nevetheless it would be worth collecting.

The Bulletin of the A.A.A.S. for July, 1944, carried an editorial by Secretary F. R. Moulton on the "Early Environment of Eminent Scientists." In this he said that there is a general impression that eminent scientists have had unfavorable educational environments in their early youth. This impression is neither affirmed nor denied but used by Dr. Moulton to point out the interest and importance of an investigation of the facts because of the light they would throw upon the problem of education and the factors which contribute to success in science.

The editorial states that men who have achieved high success in nearly every field have come from the farms and villages and quotes a recent advertisement as stating that every one of the presidents of the 18 operating companies of the Bell Telephone System began work as a clerk or in some other lowly position at a salary ranging from $25 to $65 a month. These successes, Dr. Moulton concludes, were not due to educational opportunities or to the lack of them and he asks "What factors internal and external are conducive to exceptional achievement?"

In the preparation of a volume on Men of Science in Indiana, it is recommended that in the assembling of biographical sketches an effort be made to include data that would throw light on early environmental and other factors that dispose men and women to scientific pursuits. With this in view the committee should include a member trained in statistical methods who could make some valuable deductions from the data.

About ten years ago I had the Fourth Edition of American Men of Science (1927) carefully examined and all biographies of men with Indiana connections marked. There were 13,500 entries in the volume; 692 were of men born or then living in Indiana, or 5.1 per cent of the whole, whereas the population of the state was then but 2.6 per cent of the national total.

Scientists living in the state in 1927	215 or 1.6 per cent
Scientists born in the state	540 or 4.0 per cent
Scientists both born and living in the state in 1927	63 or 0.46 per cent approx.
Scientists of Indiana connection starred as among the 1,000 distinguished	49 or 4.9 per cent

On the whole, men of science with Indiana connections made a creditable showing in 1927. Probably they would appear quite as well now.

In all probability Dr. Edington and his committee have considered many if not all of the details of procedure mentioned in this paper, nevertheless I felt an urge to present them as a result of contemplating the subject for several years, also to emphasize the richness of opportunity which confronts those who assume the work. It is predicted that the subject will grow in attractiveness and significance as more of the Academy members become engaged in helping the editorial committee.

The cost of collecting and editing the data will eventually amount to considerable. A small fund is now available for the preliminary work. From year to year the Academy should set aside from current net income such amounts as may be judged expedient to continue the work and to supplement other funds that may be contributed.

A carefully prepared brief history of the development of science in Indiana with a biographical dictionary of our men of science, past and present, would be a credit to the Academy, reflect honor on the State, and possibly incite similar work in other states. May the committee be confirmed, strengthened and supported in the enterprise.

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